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Career Development Among College Students: Determining the Influence of Career Services on Student Persistence to Graduation

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CAREER DEVELOPMENT AMONG COLLEGE STUDENTS: DETERMINING THE INFLUENCE OF CAREER SERVICES ON STUDENT PERSISTENCE TO GRADUATION

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To My Lord and Savior Jesus Christ

It is by His grace that I have come this far, I will "give thanks to the Lord, for he is good; his love endures forever"

Psalm 107: 1

To my husband Paul K. Sang Magut and my daughters Shalom Chepchumba Sang and Shawna Njoki Sang for the sacrifices, support, love and encouragement throughout the years.

I love you so much!!!

To My dearest mom, Lucy Njoki Njagi and dad, John B. Njagi Ngamau

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ABSTRACT

The primary purpose of this study was to determine the influence of participation in career services activities and selected demographic characteristics on the persistence to graduation among undergraduate students at a research university-very high research activity (RU/VH) in the Southern portion of the United States. The target population was all undergraduate students enrolled at a research university –very high research activity (RU/VH) in the Southern portion of the United States. The accessible population for this study was undergraduate students at one selected research university –very high research activity (RU/VH) in the Southern portion of the United States and the sample included the undergraduate students who entered in Fall 2008.

Using a stratified random sampling procedure, two groups of 500 students each (a. 500 students who used career services and b. 500 students who did not use career services) was drawn for analysis. Data were obtained from the selected institution's office of the registrar and the career center and transferred into a computerized recording form. Descriptive analysis, correlations, multiple regression, and logistic regression analysis were conducted to meet objectives of the study.

The findings indicated that a higher percentage of the students who used career services graduated while majority of the students who did not use career services did not graduate. The logistic regression analysis produced a significant model that increased the researcher's ability to correctly classify 85.4% of the cases of students who graduated or did not graduate. The use of the Careers2geaux system, job search appointments at the career center, college overall GPA, and gender contributed to the model significantly. In addition, the multiple regression analysis produced a statistically significant model explaining 27.4 % of the variance in persistence as

measured by time taken to degree completion in months. The variables that contributed significantly to the regression model were the college overall GPA, participation in experiential education at the career center, gender, and the category “Hispanic” in the race variable.

It was concluded that participation in career services activities had a positive influence on student persistence to graduation as measured by whether or not the student graduated. Recommendations and implications were discussed.

CHAPTER 1: INTRODUCTION

Background

The need to have a post-secondary education has become increasingly important as the global economy changes and employers demand for a skilled workforce. Globalization and continued rapid technology changes have led to the knowledge economy and the need for people to acquire specialized skills through higher education (OECD, 2012). A future projection of job requirements by the Society for Human Resource Management (SHRM) indicated the necessity to have a post-secondary degree (Leonard, 2012). Similar projections were made by the American College Testing (ACT) 2014 annual report which stated that "by 2018, nearly two-thirds of jobs will require at least some post-secondary education" (p. 25). This reality in the job market and awareness of importance of higher education has seen increased enrollments over the years in colleges and universities. The number of undergraduate enrollments in the United States, for example, between the year 2001 and 2011 rose by 32% (NCES, 2013).

Students enroll in higher education to develop their careers. Moxley, Najor-Durack, and Dumbrigue (2001) stated that "students come into post-secondary and higher education perhaps more with vocation, profession and career in mind than academic matters" (p. 123). According to a national study by Cooperative Institutional Research Program (CIRP), 87.9% of incoming first-year students indicated the most prevalent reason why students attend college is to get a better job (CIRP, 2012). Institutions of higher learning provide students with an opportunity to further their academic goals and build their career of interest. However, their academic and career goals may not be fully accomplished if they do not persist to complete their program of study, year after year through to graduation.

Institutions of higher learning continue to receive high enrollment numbers, but the graduation rates do not match the numbers of those joining colleges and universities. Across the Organization for Economic Cooperation and Development (OECD) countries, an average of 37% of a cohort enrolled for higher education in 1995 and the numbers increased to approximately 57% by around 2008 (OECD, 2008). However, although getting to college is important, persistence to completion is even more critical (Tinto, 2004). Currently, only about 39% of students on average across OECD countries are expected to persist to program completion in the universities (OECD, 2014). In the United States, of the 2003-04 college student beginners who reported working on a bachelor's degree, only 63% achieved their goals by 2009 (NCES, 2014). The six-year completion rate was even lower at 59% for students who joined a 4-year public institution and 16% for those who joined a 4-year for profit institution (NCES, 2014).

Rationale

Enrollment versus Graduation Rates

Retention and persistence to degree completion among college students is an area that has been of concern in higher education, and the attention has only grown in recent years. Tinto (1987), for example, estimated that approximately 1.2 million students, of the 2.8 million who were expected to enroll in higher education in 1986, would persist to degree completion. In the early 90s, the US led in higher education attainment levels among the OECD countries, ranking 2nd after New Zealand (OECD, 2012). However, the growth rate of higher education attainment level in the US has been slow at 1.3% per year between the years 2000-2010 compared to other OECD countries that experienced an average growth rate of 3.8% per year during the same period (OECD, 2012). As a result, other countries such as Korea, Canada, Japan, Norway, Australia, Israel, and France have surpassed the United States which ranks 14th with 42% of 25-

34 year-olds with higher education (OECD, 2012). Currently, there is a national goal, as set by President Obama, to gain primacy in the highest number of college graduates in the world by 2020 (Breneman, 2012; Carey, 2009; Geiger, 2010).

Employment Benefits

Lack of persistence to graduation negatively impacts students' academic goals and career development. Conversely, the benefits that an individual reaps by persisting to degree completion cannot be overemphasized. Students who persist to graduation are likely to obtain more employment benefits than those who drop out of college (College Board, 2013; OECD, 2012; Tinto, 2004). A post- secondary degree increases the chances of getting employed. In the year 2013, for example, the unemployment rate for high school graduates with no college education was 7.5% while that of bachelor degree graduates was 4.0% (BLS, 2014).

Furthermore, income levels of employees who hold a bachelor degree are considerably higher than those with a high school diploma. The mean earnings reported in 2013 were $ 41, 604 for a high school graduate and $ 75, 764 for an e*m*ployee with a bachelor's degree (BLS, 2013). Individuals who invest in higher education and persist to graduation can expect to receive higher net returns than individuals who did not invest in the same. On average across OECD countries, college graduates receive a net return on higher education investment of about $185,000 for a man and $130,000 for a woman (OECD, 2014). Students who persist to graduation gain social benefits as well, such as improved health and longer life expectancy (OECD, 2014; Tinto, 2004). There was a 23% point's difference between adults with higher education who reported they were "in good health" and adults who did not have post-secondary education across 22 OECD countries (OECD, 2014).

Economic Benefits

College students' persistence to program completion is also beneficial to the state and federal government. Students who persist to graduation boost the states' and nation's economy (OECD, 2014; Schneider & Yin, 2011; Tinto, 2004). A state with educated citizens is able to supply its labor market with a skilled workforce (Schneider &Yin, 2011) that leads to innovation and economic growth. This also puts the state at a competitive edge with other states across the nation. The inverse is also true and therefore, students who do not persist to graduation cost the state and federal government huge losses in income. According to a report by the American Institutes for Research (AIR), full-time students who enrolled for a bachelor's degree in the fall 2002 and did not graduate within the six-year period cost the nation a loss of income amounting to 3.8 billion dollars, approximately 566 million dollars was lost in federal income taxes, and about 164 million dollars was lost in state income taxes (Schneider & Yin, 2011). Considering that these are losses caused by only one cohort, 2002, if the accumulated loss is summed up for every cohort that falls short of completion rates the amounts would increase considerably (Schneider & Yin, 2011).

According to the same report, the state of Louisiana, for example, was among the states that lost more than 100 million dollars in income and at least more than 15 million dollars in federal taxes (Schneider & Yin, 2011). On top of the list were California, New York and Texas which incurred an income loss of $356 million, $359 million, and $341 million, respectively. Specifically, the state of Louisiana incurred an income loss of approximately 107 million dollars for its full-time students who joined college in fall 2002 and did not graduate within six years. It lost an additional 4.3 million dollars in state income tax and 16 million dollars in federal tax (Schneider & Yin, 2011).

Social Benefits

In addition to economic benefits, a society with college graduates enjoys numerous social benefits (OECD, 2014; Tinto, 2004). As Tinto (2004) stated, "People with college education are much more likely to participate effectively in the governance of the nation, contribute their time and money to community service, consume fewer public services, and commit fewer crimes" (p. 7). According to the OECD (2014) report, there was an average 10% point difference between adults with higher education and those without who reported participation in volunteer activities across OECD countries. This difference was even higher in the US with a 26% point difference in volunteer services participation between persons with post-secondary education and high school graduates. Moreover, students who persist to graduation are likely to have higher political efficacy ("believe that they have a say in the government") than students who do not complete their undergraduate program (OECD, 2014). There was an average 20% point difference in political efficacy between persons with higher education and those without across 20 OECD countries (OECD, 2014).

Conclusion

It is clear that higher education is essential in supplying the workforce with skilled labor especially in today's knowledge economy. Furthermore, both the individual and society reap numerous benefits through higher education attainment levels. In view of that, it is critical that institutions of higher learning take measures to enhance their students' retention to graduation. Moreover, each institution and other stakeholders in the United States have a responsibility to ensure that the nation achieves its goal to gain primacy in higher education graduation rates in the world by 2020. While numerous studies have been conducted on college students' retention, most of them have focused on the characteristics of students who dropped out of school or

transferred to another institution, institutional characteristics that contributed to students' attrition, and retention of specific groups such as first years, those from minority groups, first generation students, etc.

Since the most prevalent reason why students attend higher education is for career development, it is important that institutions of higher learning seek to understand the impact of students' participation in career development activities in enhancing their persistence to degree completion. Career services conduct various activities in order to meet college students' vocational needs.

Purpose of the Study

Therefore, the purpose of this study was to determine the influence of participation in career services activities and selected demographic characteristics on the persistence to graduation among undergraduate students at a research university-very high research activity (RU/VH) in the Southern portion of the United States.

Objectives

The following objectives were formulated to guide this study:

1. To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services on the following selected characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) School/department in which enrolled

n) Whether or not graduated

o) Time to degree completion

p) Type of career services used

2 To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services on the following selected characteristics;

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) School/department in which enrolled

n) Whether or not graduated

o) Time to degree completion

3. To compare the group of students who entered a research university–very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services with the group of students who entered a research university–very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services based on the following selected characteristics;

    a) Gender

    b) Race

    c) Whether or not the student had financial aid

    d) High school GPA

    e) Rank in high school class

    f) ACT composite score

    g) College overall GPA

    h) First-generation student or not

    i) Whether or not employed as student employee while in college

    j) Nationality

    k) Whether or not the student participated in Greek life

    l) Athlete or not

4. To compare career services users and non-users on their persistence to graduation as measured by time to degree completion in months and whether or not the student graduated.
5. To determine if a relationship exists between persistence to graduation as measured by time to degree completion in months and the following selected demographic characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class
    f) ACT composite score
    g) College overall GPA
    h) First-generation student or not
    i) Whether or not employed as student employee while in college
    j) Nationality
    k) Whether or not the student participated in Greek life
    l) Athlete or not
6. To determine if a model exists which explains a significant portion of variance in the persistence to graduation as measured by time to degree completion in months of college students at a research university- very high research activity (RU/VH) in the Southern portion of the United States from the following characteristics;
    a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) Whether or not they used career services

n) Type of career services used

7. To determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center.

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) Type of career services used

Definition of Terms

1. Persistence: Persistence in this study was defined as completion of a degree program over time. As such, it was described as fulfillment of degree program requirements through graduation and the time taken to degree completion in months.
2. Gender: This variable had two levels (male and female) as provided by students in the institution's database.
3. High school GPA: This referred to the academic grade point average a student earned from high school, usually calculated out of 4 points.
4. College overall GPA: This described the cumulative grade point average that a student obtained from all the undergraduate courses taken at the time of graduation or their last enrolled semester.
5. Rank in high school class: This was a measure of a student's performance in comparison to his/her classmates. For the purpose of this study, the raw rank number was converted to a "Rank Score" in order to make meaningful interpretation. The "Rank Score" was computed by dividing the rank by the total class size and multiplying by 100.

6. Race: There were seven options upon which students identified their race, Black or African American, American Indian or Alaskan Native, Asian, Caucasian, Hispanic, Multi-racial, and Native Hawaiian or other Pacific Islander.
7. School/department: This referred to the school or department in which a student was enrolled during his/her last semester.
8. First-generation student: This referred to students "whose parents' highest level of education is a high school diploma or less" (NCES, 1998, p. 7). The variable was used to describe students on whether or not their parent(s) had a college degree.
9. Nationality: The variable was used to describe students based on their country of birth.

Significance of the Study

The findings from this study add to the body of knowledge on student persistence and retention efforts in institutions of higher learning. While the US strives to achieve a national goal of regaining primacy in higher education graduation rates in the world by 2020 (Breneman, 2012; Carey, 2009; Geiger, 2010), the results of this study will have implications in the ongoing conversation on student persistence and retention. Although there are numerous studies on this subject, very few have focused on the influence of career services in college retention efforts. In fact, it is until recently that some scholars and practitioners started looking at the role of career services in enhancing student's retention (e.g. Shoemaker & Krogmann, 2012). Therefore, this study on participation in career services provides an additional element to the discussion on student persistence.

Additionally, this study has implications on practice. The National Association of Colleges and Employers (NACE) professional standards for college and university career services recommend periodic evaluation of programs in career services including an assessment

of the "career services contribution to or impact on retention and degree completion" (NACE, 2012, p. 36). Therefore, results of this study will provide data-driven information regarding the role of career services in meeting the institution's mission and achieving educational goals. Furthermore, while career services practitioners may be aware of their role in student's persistence efforts in colleges (Shindell, 2013), results from this study will provide verification of the positive impact of their role in persistence efforts.

One of the areas this study explored was the correlation of participation in specific activities and persistence to graduation. Thus, results of the study reported programs or activities with positive relationship to student persistence and activities that may be negatively correlated. As a result, this would enable evidence-based decisions regarding career center's programs or activities, for example, those that may require cultivation or reevaluation.

This study also has implications on higher education institutions' funding. One of the metrics being utilized in appropriation of state funds is students' persistence and degree programs completion rates (CCA, 2013). Furthermore, results of this study would be useful in administrative decisions regarding resource allocation in universities especially at a time when higher education faces huge budget cuts. For example, Louisiana higher education expects an approximately $600 million reduction in budget cuts as reported by the Higher Education Commissioner, Joseph Rallo (Capritto, 2015). In addition, the findings from this study would inform the university administration regarding retention programs that would enhance student persistence to degree completion.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

Post-secondary education is becoming more necessary as the labor market's demand for skilled workforce increases. As institutions of higher learning report a rise in freshman enrollment, the graduation numbers from those institutions do not match the enrollments, leading to a rising concern for student retention. Although the topic of retention or persistence to graduation has been regarded as complex and difficult to tackle, there is a lot of research that has been conducted over the years looking at different aspects of retention. This chapter will provide an overview of student persistence to graduation, look at strategies and practices employed by institutions of higher learning to enhance retention, outline the need to look at career services in student retention, and discuss a theoretical framework.

Overview: Student Persistence and Retention

Retention and persistence are sometimes used interchangeably. Lenning (1980) simply stated that "student retention means student persistence" (p. 6). He expounded that persistence could be completion of a degree or certificate, term or a course, personal goal, or program (Lenning, 1980). According to the Center for the Study of College Student Retention (CSCSR, n.d.), the national retention definition as established by the federal government includes monitoring full-time student completion of a degree program over time, usually 6 years for 4-year institutions and 3 years for 2-year institutions. Other definitions of retention offered by CSCSR (n.d.) include course retention which focuses on the number of students that enroll in a course credit and successfully complete it at the end of the term; student retention which looks at completion or achievement of student personal or academic goals; and distance or extended campus retention which is defined as retention of student "in a distributed learning course and/or

program if he/she is making satisfactory progress towards a personal and/or educational objective consistent with the college's mission" (para. 7). The retention definition adopted for this paper is student persistence to completion of a degree program over time.

For a long time the United States led in higher graduation rates of students enrolled in postsecondary education (OECD, 2012). In 1995, for example, the US ranked second in higher education graduation rate, after New Zealand, among 19 country members of the organization for economic co-operation and development (OECD, 2012). Although it is still one of the countries with higher education attainment levels, ranking 14th with 42% of 25-34 year-olds with higher education, other countries have surpassed the US in terms of higher education graduation rates (OECD, 2012). While the US graduation rates in higher education increased from 33% in 1995 to 38% in 2010, it ranked thirteenth among 25 OECD countries which on average had an increase of 39% in 2010 from 20% in 1995 (OECD, 2012).

Institutions of higher learning have always been concerned about retention of their students as evidenced by research on retention and numerous strategies implemented on campuses to enhance student persistence. However, recent statistics indicating lower graduation rates in higher education in the US, in comparison to her peers, have led to renewed calls and efforts to enhance retention and persistence to completion in colleges and universities. From a national level, President Obama declared a national goal to increase completion rates in higher education by 2020 (Breneman, 2012; Carey, 2009; Geiger, 2010). State governments followed suit through initiatives such as Complete College America (CCA) alliance of states and reforms in funding of higher education (CCA, 2014). Other stakeholders, within institutions of higher education and outside, have joined in the efforts of college retention. Overall, there is increased

demand for colleges and universities to be more accountable for their students' persistence to graduation (WWISR, 2005).

Strategies to Enhance Persistence and Retention

Early research on student persistence and retention indicated several strategies and practices employed by institutions of higher learning to enhance completion rates. Some of the programs in place in the late 60s and 70s were special courses, group counselling and orientation, individual counselling, learning skills and tutoring, attention to policies and procedures, and faculty development and training (Beal & Noel, 1980). In 1979, a national survey, *what works in student retention* (WWISR), was conducted to identify campus efforts of student retention that were in use among higher educational institutions comprising public and private two-year and four-year institutions. In this study, which was a joint project of the American College Testing (ACT) Program and the National Center for Higher Education Management Systems (NCHEMS), Beal and Noel (1980) identified about 20 retention practices and programs as reported by the 947 institutions that responded to the survey. Among the programs included were learning and academic support, expanded orientation programs, career assistance programs, academic advising, curricular developments and cocurricular activities, faculty awareness and development activities (Beal & Noel, 1980). In their conclusion, Beal and Noel (1980) mentioned academic stimulation and assistance, personal future building, and involvement experiences as critical areas of concern.

Some years later, a similar study was conducted by ACT in collaboration with American Association of State Colleges and Universities (AASCU) using the WWISR survey instrument among AASCU member institutions (Cowart, 1987). The study focused on retention activities or programs that had been restructured or introduced since the 1979 study. One hundred and ninety

institutions that responded to the survey reported improvement of the academic advising program (72.1%), special orientation programs (71%), establishment of early warning systems (65.6%), and curricular innovations in credit programs (61.7%) (Cowart, 1987).

In 2004, Habley and McClanaham conducted another study on what works in student retention. Based on the changes in literature between the previous studies, they identified a list of 82 retention action programs (from 20 in 1980) which they included in the survey and asked the respondents to rate their contribution to retention in colleges and universities (Habley & McClanahan, 2004). Retention practices that were rated as having the greatest contribution to retention, by 1,061 two-year and four-year private and public colleges that responded to the survey, fell into three main categories; first-year programs, academic advising including centers that combined academic advising with career/life planning, and learning support (Habley & McClanahan, 2004). Specific action programs that appeared on top of the list for greatest contributing practices included freshman seminar/university 101 for credit, tutoring programs, and advising interventions with selected student population (Habley & McClanahan, 2004).

In spring 2009, ACT conducted its fourth national survey on what works in student retention in colleges and universities. Similar to the previous studies, institutions were asked to rate retention programs/interventions or practices that had the highest contribution to student retention. A list of 94 retention practices was included in the revised WWISR instrument and participants were asked to identify those that were used in their individual institutions as well as rate their contribution from a scale of 5 (major contribution) to 1 (little or no contribution) (ACT, 2010_a). Some of the most applied retention practices as identified by the 258 public four-year colleges and universities that responded to the survey included internships -97%, tutoring-97%, faculty use of technology in teaching-95%, summer orientation-93%, individual career

counselling-93%, student leadership development-91%, and career exploration workshops-89% (ACT, 2010_b).

Retention practices that had the highest mean in contribution to retention in public four-year colleges and universities were academic advising, increased number of academic advisors, advising interventions with selected student populations, and comprehensive learning assistance center/lab (ACT, 2010_b). Of all the 94 practices included in the survey, only nine practices were selected as the top three practices by 10% or more of the public four-year colleges and universities as follows; freshman seminar/university 101 (credit), supplemental instruction, tutoring, living/learning communities (residential), advising interventions with selected student populations, mandated placement of students in courses based on test scores, academic advising center, summer orientation, and early warning system (ACT, 2010_b).

The above-mentioned practices, programs, or strategies are just a few of the hundreds of retention action programs employed by institutions of higher education over the years to enhance retention efforts. Most of them, and frequently used in universities are single-faceted programs such as advising and orientation programs, but there are also multifaceted approaches which can even be more effective in student retention (Lenning, 1980). The multifaceted approaches combine more than one single approach and involve everyone on campus by seeking their participation in student retention in some way (Lenning, 1980). It is worth noting that the effectiveness of each of these strategies and practices varies from institution to institution, in part due to the unique setting of each institution. An effective retention program as outlined by Tinto (1987_a) should emphasize a communal nature of life in colleges or universities and a commitment to students, education, and its mission. More importantly, he believes that the secret

to effective retention efforts lies in accomplishing the core purpose of educating the students and not just their mere retention (Tinto, 1987_a).

In recent years, as the issue of college retention and student persistence to graduation has become more critical across the nation, higher education stakeholders have undertaken measures and collaborated with colleges and universities to enhance student success and increase completion rates. In 2009, CCA formed an alliance of states, which had a membership of 35 states as of November 2014. Their main goal is to increase student success and close the attainment gap in higher education. The alliance came up with five strategies to enhance student persistence to completion (CCA, 2013). Known as the "Game Changers", the strategies are proving to "yield two, three, and four times the results of traditional programs" (CCA, 2014, p. 2). Their outlined strategies include performance funding, guided pathways to success (GPS), full time is 15, corequisite remediation, and structured schedules (CCA, 2013; CCA, 2014).

Performance funding highlights a shift in appropriation of state funds from basis of college enrollments to performance based on metrics such as students' persistence and degree programs completion rates (CCA, 2013). This strategy has been implemented by some states in the alliance such as Indiana, Ohio, Tennessee, etc. and others have plans underway to implement it (CCA, 2013). Another game changer strategy is the CCA's GPS which puts all students in a structured plan that maps out their entire program pathway (CCA, 2013). Under GPS are various actions such as defaulting undecided students in to "mega majors" and narrowing it to a specific major as they progress, use of academic maps, intrusive advising, and integrating early warning system that alerts counselors of students who fall out of track (CCA, 2014). Some of the universities using GPS include Arizona state university, Georgia state university, and Florida

state university which, for example, have experienced a rise in their students' graduation rate to 74% (CCA, 2013).

Additionally, full-time is 15 strategy also referred to as "15 to finish" encourages full-time students to take 15 credits per semester or 30 credits per year which not only boosts completion but also enables students to graduate on time - 4 years for bachelor's degree (CCA, 2013; CCA, 2014). About 20 states have implemented this initiative either in their entire state or in some campuses, for example, university of Hawaii system which attained 14.7% increase in the number of full-time students enrolled for 15 credits in 2011 (CCA, 2013; CCA, 2014). Moreover, corequisite remediation seeks to meet student needs through provision of instructional support and develops a curriculum that meets their career needs, e.g. Tennessee Colleges of Applied Technology which often reports graduation rates of at least 75 % (CCA, 2013). The structured schedules, just as the name suggests, help students to have an organized schedule which is especially useful for students balancing work, school, and their personal lives (CCA, 2013). Some of the colleges using structured schedules include City University of New Yolk, University of Montana (UM) Western, and Texas State Technical College (CCA, 2014).

Looking at the above strategies, it is clear that universities and colleges are making considerable efforts to increase student retention and persistence to program completion. On the other hand, as the issue of student persistence and retention becomes a national concern, federal and state government and other stakeholders are not only demanding accountability from higher education institutions, but they are also putting measures and collaborating with colleges and universities to boost completion rates and enhance student success. While there is evidence of some progress in enhancing completion rates, institutions still have a long way to go in closing the enrollment-completion gap. Furthermore, if the US national goal to regain supremacy in the

completion rate of graduates from higher education is to be accomplished by 2020, higher learning institutions ought to be more strategic and engage everyone in the campus community. Although institutions may have a person, team, or office in-charge of retention efforts, strategies and action programs that engage everyone on campus might be more effective than single programs (Lenning, 1980; WWISR, 2005).

Why Look at Career Services in Retention Efforts?

The most prevalent reason why students go to college is to get a better job as revealed by 87.9% of incoming first-year students who responded to a national study in fall 2012, the Cooperative Institutional Research Program (CIRP, 2012). Moxley, Najor-Durack, and Dumbrigue (2001) noted that "students come into post-secondary and higher education perhaps more with vocation, profession and career in mind than academic matter" (p. 123). Considering the role of career services in preparing college students for the world of work, it puts them at a strategic position to impact retention on colleges and universities. Furthermore, as mentioned earlier, retention efforts on campus should be a responsibility of all and not a single office. The mission for career services, as outlined in the recently revised National Association of Colleges & Employers (NACE) professional standards for college and university career services (2014_a), states that:

> Career services must advance the mission of the institution as well as support academic and experiential learning programs to promote student learning and student development. Within this context, the primary purpose of career services is to assist students and other designated clients in developing, evaluating, and/or implementing career, education, and employment decisions and plans. (p. 5)

While career centers in higher education have for a long time been referred to as placement offices (Heppner & Johnston, 1986), their role has been expanding over the years (Lucas, 1986; Wessel, 1998). At the early years of career centers establishment in colleges and universities, the main role was to help students find a job in the labor market (Castella, 1990; Wessel, 1990). Castella (1990) summarized three shifts for career centers from placement between 1940s to 1950s, to planning between the 1960s to 1980s, and networking in the 1990s. This revealed an expansion of career services beyond job placement to empowering the students with skills for job search and career development through career education and counselling (Castella, 1990; Lucas 1986).

Career planning and counselling involves assisting students with self-assessment and providing career information that would equip them for effective career exploration and decision making (Castella, 1990; Lucas, 1986; Wessel, 1998). Furthermore, career networking is all about connections and equipping students with skills for communication and connecting with employers (Castell, 1990; Wessel, 1998). A study seeking to examine the philosophical orientation of colleges and universities career centers in the United States indicated that 51% of career centers, that responded to the survey, provided career planning services, 36% networking, and 13% placement (Wessel, 1998). Recently, there is a move to career connections model such as the one being implemented by Stanford University to meet their vision 2020 (NACE, 2014_b). It focuses on connections with student and faculty, alumni and parents, and employer communities (NACE, 2014_b).

Career centers provide a range of services, and mostly they fall in four main areas, "career counseling/advising, instructional sessions and workshops, job and internship opportunities, and networking sessions with alumni and other professionals" (Schaub, 2012, p.

202). Of these services, the most commonly utilized by career centers is counselling according to career services benchmark survey for colleges and universities (NACE, 2013; NACE, 2014_a; Nagle & Bohovich, 2000). In the 2013-14 survey responded by 881 NACE members, 98% offered counseling by appointment, 81 % offered drop-in counseling, and 90% conducted career fairs (NACE, 2014_a). Other services reported by more than 50% of the respondents included, career workshops, academic and employer internships, on-campus interviewing, work/study programs, career assessment tools, and career resources library (NACE, 2014_a).

In view of these and other services offered at career centers, it is clear that they are a valuable resource in meeting college student's needs. In emphasizing the need for career centers to be planned, Herr, Rayman, and Garis (1993) asserted that "they are far too important, for too many college students, to their total education, and their transition from college to the next educational, career, or social step" (p. 313). The same was echoed by Shindell (2013) who stated that "career services have a strategic position of helping students integrate into the academic and social environment of the campus community, while helping them prepare for a career beyond their post-secondary education" (para. 1).

Therefore, in the continuing conversation of student retention and persistence to completion, career centers would have a role to play in enhancing student's persistence to completion. In recognizing their role, NACE professional standards for college and university career services stated the need for assessment of "career services contribution to or impact on retention and degree completion" (NACE, 2012, p. 36). Starting with early findings of WWISR, one of the areas of concern highlighted in the 1979 study was personal future building (Beal & Noel, 1980). This is essential in career development as it involves "assisting students in

clarifying their personal needs and interests and learning how the college experience can contribute to their development" (Beal & Noel, 1980, p. 91).

In the same study, students who were undecided about their majors received the third highest dropout rating (Beal & Noel, 1980). Consistent with these findings, Tinto (1987_a) identified uncertainty about career aspirations as one of the causes why students do not persist to program completion. Actually, one of his advices to institutions about student retention was to integrate "admissions to other institutional services, especially those involving career counseling and academic advising" (Tinto, 1987_a, p. 13). In more than a decade later, Tinto (2004) emphasized the need for effective advising in retention efforts which must address the needs of first-generation students as well as those who are undecided about their majors or those who are decided but may want to change.

Theoretical Framework/Conceptual Framework

One of the earliest theories explaining student retention was developed by Spady in 1970. Spady explained that background characteristics (e.g. family background and social economic status) and college variables such as grade point average lead to social integration, a key element in dropout process as it relates to satisfaction and institutional commitment (Pascarella, 1982). Building on Spady's work and Durkheim's theory of suicide, Tinto's model was developed (Tinto, 1987_b). First developed in 1975, the model explains that students join higher education with background characteristics such as social economic status and value orientations; personal attributes such race and gender, and prior experiences and achievements such as high school grade point average (Tinto, 1975). These attributes interact and influence development of initial individual's intentions, educational expectations and goals, and commitment to the institution;

which together with pre-entry attributes create initial interactions within the academic and social system (Tinto, 1987$_{b,}$ 1993).

Tinto's model argues further that within the academic system, goal commitment leads to high academic performance and subsequently to academic integration, which lead in turn to even greater goal commitment (Tinto, 1975, 1987$_{b,}$ 1993). Similarly, interactions with faculty, staff, and peers within the social system lead to social integration and subsequently to greater institutional commitment (Tinto, 1975; Pascarella, 1982). Both academic and social integration are expected to enhance student persistence to college completion through enhanced goal and institutional commitment (Tinto, 1975, 1993). Accordingly, the interplay of goal commitment and institutional commitment is important in the dropout or persistence decision as Tinto (1975) argued that "high commitment to the goal of college completion, even with minimal levels of academic and/or social integration and therefore minimal institutional commitment, might not lead to dropout from the institution" (p. 96). Tinto's model also puts into consideration external factors that may influence a student's decision to persist or drop out even if they have positive interactions in the environment such as availability of a job (Tinto, 1975, 1993).

Other models followed such as Pascarella's conceptual model which was developed in 1980 (Pascarella, 1982). Pascarella's model also recognized students' background characteristics which interact with institutional factors such as admissions, policies, and size (Pascarella, 1982). These factors influence informal interactions with other students, faculty, and educational outcomes including academic performance and career goals (Pascarella, 1982). Another model worth mentioning is Astin's theory of student involvement. The model highlights three elements of input, environment, and output (Astin, 1984). Input comprises a student's background and prior experiences, environment involves experiences in college, and output

includes educational outcomes such as knowledge and attitude (Astin, 1984). His model emphasizes that the quality and quantity of student's engagement in the environment influences learning and student's development (Astin, 1984). Based on the objectives of the current study as well as variables of interest, Tinto's model provides the main framework for the study (see Figure 1).

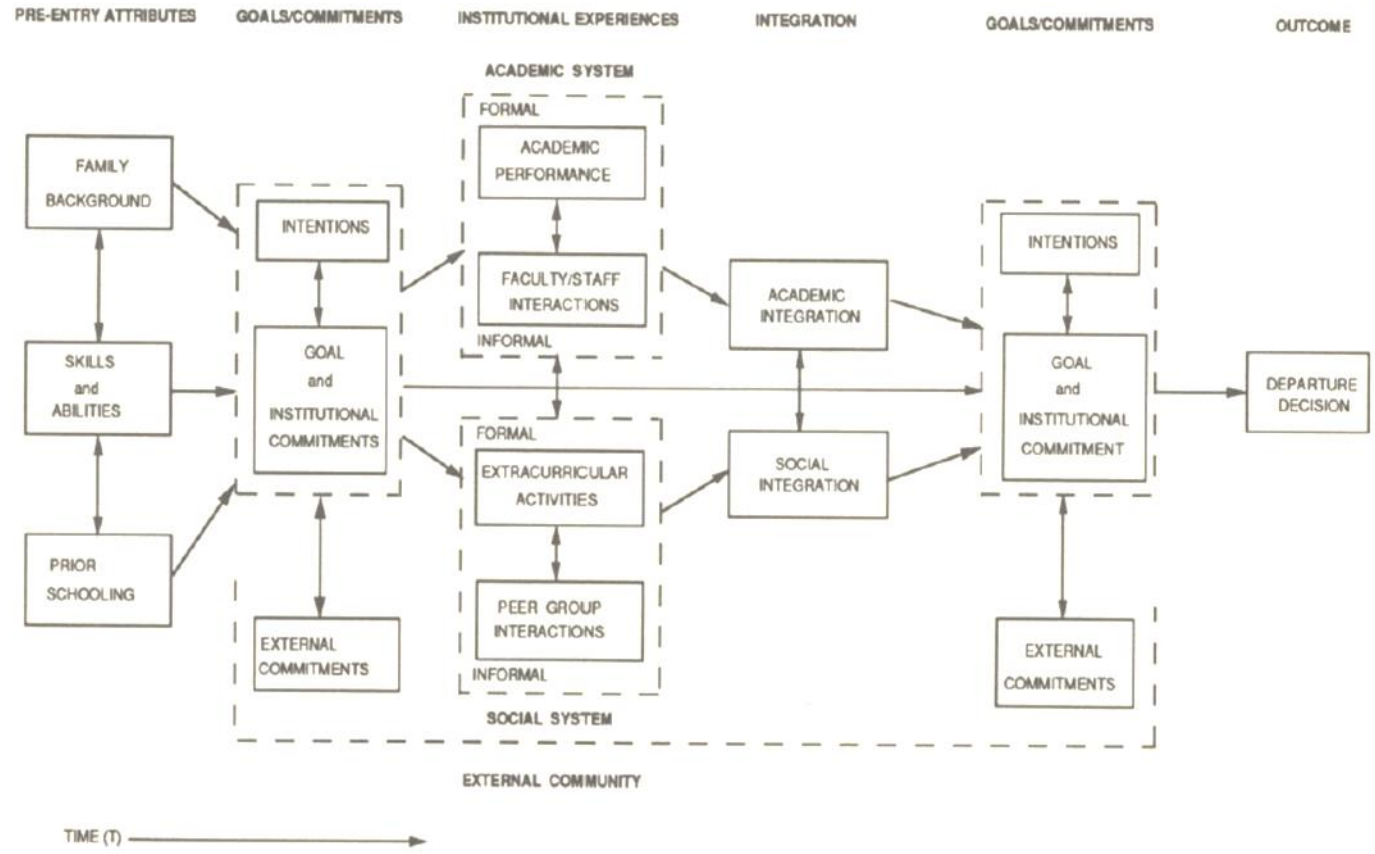

Figure 1 Tinto's Longitudinal Model of Institutional Departure (Tinto, 1993, p. 114)

On the other hand, career development among students can be explained using various theories. Holland's theory explains an interaction between an individual and the environment using a hexagonal model outlining six personality types and six analogous model environments (Smart, Feldman, & Ethington, 2006; Tracey & Rounds, 1993). Each individual has preferences, interests, values, and beliefs that define his or her personality. Holland's model assumes that an individual chooses a vocation based on his or her personality (Gottfredson & Johnstun, 2009;

Tracey & Rounds, 1993). On the other hand, the environment places demands or requirements, rewards, and reinforces individuals (Smart et al., 2006) and the "Level of an individual's aspirations, preferences, or capability for coping with complex demands and level of complexity of an environment's demands are important in understanding vocational choices and other vocational behavior" (Gottfredson & Johnstun, 2009, p. 104).

An individual's success according to Holland's model is influenced by the person-environment fit (Tracey & Rounds, 1993). He uses the term congruence which assumes that a higher person-environment fit enhances the likelihood of career and educational success and stability (Tracey & Rounds, 1993). Accordingly, students' success in higher education can be described using Holland's theory of career development (Smart et al., 2006). Thus, both Tinto's model and Holland's theory will be considered for theoretical framework for this study.

When looking at the educational setting Holland's theory assumes that individuals choose academic majors in areas that match their personality and in an environment that engages them in activities that aligns with their interests and values (Smart et al., 2006). While some students self-select their majors before college entry, others join higher education undecided about their majors. Although many students experience uncertainty about their academic major and career goals at some point in their college life, when uncertainty is unresolved, it can lead to dropout (Tinto, 1987). This is one area that career services can come in strategically in retention efforts.

Career services help students in career decidedness, an important element in their career development and persistence. They use various services such as career counseling, self-assessment, computer-assisted tools, workshops and/or courses regarding career exploration, among others. Students who participate in such activities are likely to persist according to previous studies (Anderson, 2002; Blau & Snell, 2013; Feduccia, 2003; French, 2014). A group

of 150 undergraduate students who received career counselling were compared with a control group who did not receive career counselling at Southern Illinois University at Carbondale (Anderson, 2002). The study which examined the *effect of career counselling and its process on retention* found that students who went through career counselling were retained at a higher rate than those who did not (Anderson, 2002).

Feduccia (2003) also compared a random sample of freshmen who entered a research-extensive university with a declared major with a random sample of freshmen who entered the same institute with undeclared majors and used career Discovery 1, a computer-assisted career decision-making program, on stability of their college major selection. The results indicated a higher retention rate for students who used career Discovery 1 in deciding their majors than those who had declared majors and did not use the services. Similarly, French (2014) examined retention of first-time students who enrolled in a career exploration course in a community college during 2009-2011 academic years. Results indicated higher retention for students who attended the career exploration course than those who did not attend the course (French, 2014).

Tinto's model also mentions the importance of integration in both academic and social environment in persistence decision (Tinto, 1987_b). Within the larger college environment, there are sub-environments such as academic major department (Smart et al., 2006), classroom, peer groups, and other interactions (Tinto, 1987_b). Incongruence, defined by Tinto (1987_b) as "the mismatch or lack of fit between the needs, interests, and preferences of the individual and those of the institution" (pp.53-54), can interfere with student's persistence. According to Holland's theory, the environment places demands upon the individual (Tracey & Rounds, 1993) and incongruence may arise within academic system if an individual's interests, skills, and abilities are incompatible with the environment's demands (Tinto, 1987_b). On the other hand, congruence

within the academic environment would be expected to enhance goals and institutional commitment and consequently lead to increased persistence (Tinto, 1987_b). A good match of a student's personality and his/her chosen major is likely to enhance persistence as the student pursues an area of interest.

However, there is also an external environment, outside the campus community, that may also interfere with college student persistence (Tinto, 1987_b), for example, the world of work. Career services provide students with work experiences opportunities through avenues such as internships, co-ops, summer jobs, part-time jobs, and volunteer services. These opportunities are important as they help students to "explore major professions or careers, and clarify the academic and preparation demands each kind of profession creates for its aspirants" (Moxley et al., 2001, p. 125). When students find a good match between the academic major they are pursuing in college and their potential future profession or career, it might stimulate them to persist through completion of their program.

Similarly, incongruence may arise within the social system (Tinto, 1987_b) between an individual's interests, values, beliefs, practices and those of others in the environment. Their social environment may involve group affiliations, classroom interactions, residence halls, and interactions with faculty and staff outside classroom (Moxley et al, 2001; Tinto, 1987_b) for instance in the library and career center . Career services, in addition to interactions between their staff and students, provide social forums with employers and alumni where students can network. Social interactions help students to discover themselves and guide their direction (Moxley et al, 2001). If students find a match between these interactions and their interests and values, they are expected to make positive persistence decisions (Tinto, 1987_b). Congruence within the academic and social environment would be expected to enhance goals and

institutional commitment and consequently lead to increased persistence (Tinto, 1987_b). Furthermore, enhanced goal commitment may arise from having clear career goals. Hull-Blanks et al. (2005) studied the relationship of career goals with retention-related factors among 401 first semester college freshman. The results indicated that freshmen students who reported job-related career goals made more positive persistence decisions than students who did not have defined career goals (Hull-Blanks et al., 2005). In their discussion they stated that "having an identified goal that is dependent on successful completion of an education facilitates decisions to remain in school" (Hull-Blanks et al., 2005, p. 25).

Conclusion

Moxley, Najor-Durack, and Dumbrigue (2001) stated in their book, *keeping students in higher education,* that "retention and persistence programs need to recognize that students come into post-secondary and higher education perhaps more with vocation, profession and career in mind than academic matters" (p. 123). Therefore, career development is critical among college students and more so their persistence to program completion. As college and university career centers guide students in career exploration and prepare them for the world of work, they engage in activities that enhance their academic and social integration thereby increasing their chances of persistence. Furthermore, career services help students to identify and clarify their intentions for joining college (through self-assessment and self-awareness), develop educational and career goals (career exploration and career decision-making), commit to educational and institutional goals and engage them in activities that encourage continual commitment to goals such as internships, co-ops, networking forums with alumni, career fairs, among others. Increased students engagement is related to their success and likelihood of persistence (Blau & Snell, 2013).

CHAPTER 3: METHOD

Population and Sample

The target population for this study was all undergraduate students enrolled at a Research University –very high research activity (RU/VH) in the Southern portion of the United States. The accessible population was undergraduate students at one selected Research University –very high research activity (RU/VH) in the Southern portion of the United States. The sample for this study was undergraduate students who entered in Fall 2008 at one selected Research University – very high research activity (RU/VH) in the Southern portion of the United States.

The sampling plan for this study was conducted as follows;

- All undergraduate students who enrolled at one selected Research University –very high research activity (RU/VH) in the Southern portion of the United States in Fall 2008 were identified from the database of the institution's office of the registrar. This freshman class of Fall 2008 consisted of approximately 5,000 students according to the institution's records.
- The data from the selected institution's office of the registrar were then merged with the institution's career center database in order to identify whether or not students, from the 2008 cohort of freshmen, utilized services of the career center and for those who did the specific activities in which they participated.
- The researcher obtained the merged database from the career center office and using a stratified sampling procedure selected a random sample of 500 students who used career services and a random sample of 500 students who did not use any services from the institution's career center.

Instrumentation

The instrument used to collect data for this study consisted of a computerized recording form designed by the researcher. The form included all the relevant variables as identified by the researcher based on a review of related literature and information obtained from the offices of the registrar and the career center of the selected research university –very high research activity (RU/VH) in the Southern portion of the United States.

Data Collection

The first step in this data collection sought an exemption from institutional oversight through the university's institutional review board (IRB). Once the IRB approval was granted, the researcher requested the selected institution's office of the registrar to send the data to the career center where the two databases were merged to provide the accessible population's variables of interest. The researcher obtained the data from the selected institution's career center and transferred the information to a researcher-designed computerized recording form. The information obtained from the career center had no individual subject identifiers in order to maintain anonymity. Based on the variables of interest, as identified from the literature review and institution's database, the information was systematically recorded in the computerized form and variables coded for ease of analysis and interpretation.

Data Analysis

The data were analyzed to meet the specific study objectives as follows;

Objective 1 & 2 was to describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services (objective 1) and did not use career services (objective 2) on the following selected characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not
m) School/department in which enrolled
n) Whether or not graduated
o) Time to degree completion
p) Type of career services used

The most appropriate descriptive statistics for all the variables measured at nominal level were frequencies and percentages. These variables included; gender, race, whether or not the student had financial aid, whether or not the student participated in Greek life, first-generation student or not, whether or not employed as student employee while in college, nationality, school/department in which enrolled, athlete or not, whether or not graduated, and type of career services used. On the other hand, the most appropriate descriptive statistics for all the variables

measured at an interval level (high school GPA, rank in high school class, ACT composite score, college overall GPA, and time to completion) were means and standard deviation.

Objective 3 was to compare the group of students who entered a research university – very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services with the group of students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services based on the following selected characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not

The most appropriate comparison statistics procedure for all the variables measured at a nominal level was Chi-square test of independence. These variables included; gender, race, whether or not the student had financial aid, first-generation student or not, whether or not employed as student employee while in college, nationality, whether or not participated in Greek

life, and athlete or not. On the other hand, the most appropriate comparison statistic method for all the variables measured at an interval level (high school GPA, rank in high school class, ACT composite score, and college overall GPA) was independent t-test.

Objective 4 was to compare career services users and non-users on persistence to graduation as measured by number of years to program completion. This objective comprised of two components; a) comparing career services users and non-users on their degree completion (whether or not they graduated) and b) comparing career services users and non-users on the time taken in months to degree completion (including only those who graduated). To accomplish the first component, comparing career services users and non-users on whether or not the student graduated, a Chi-square test of independence was conducted using an alpha level of 0.05 set a` priori. To accomplish the second component, comparing career services users and non-users on the time taken in months to degree completion, an independent t-test was conducted using an a` priori alpha level of 0.05.

Objective 5 was to determine if a relationship exists between persistence to graduation as measured by time to degree completion in months and the following selected demographic characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

The most appropriate statistical procedure to measure the relationship between the dependent variable (persistence), measured as a continuous scale, and all the nominal-dichotomous variables (gender, whether or not the student had financial aid, first-generation student or not, whether or not the student participated in Greek life, nationality (US citizen or not), whether or not employed as student employee while in college, and athlete or not) was independent t-test. The analysis of variance (ANOVA) was used to measure the relationship between race and persistence to graduation as measured by time to degree completion in months. Race was a categorical variable with more than two levels and, therefore, ANOVA was the most appropriate statistical technique selected for its ease of interpretation of the findings. On the other hand, the Pearson product moment correlation coefficient was the most appropriate measure of relationship between persistence to graduation and variables measured at an interval level (high school GPA, rank in high school class, ACT composite score, and college overall GPA).

Objective 6 was to determine if a model exists which explains a significant portion of variance in the persistence to graduation of college students at a research university- very high research activity (RU/VH) in the Southern portion of the United States from the following characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not
m) Whether or not used career services
n) Type of career services used

The most appropriate statistical procedure used to accomplish this objective was multiple regression analysis. This was selected as the most appropriate statistical procedure because the dependent variable (persistence to graduation) was measured on a continuous level by time taken in months to degree completion. The selected independent variables included categorical and interval level variables. To allow for meaningful analysis and interpretation of the results, any categorical variable that had more than two levels was binary coded. For the types of career services, each identified service was entered as a single variable coded as whether or not the service was used.

Objective 7 was to determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center.

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not
m) Whether or not used career services
n) Type of career services used

The dependent variable in this objective was whether or not they persist to graduation (dichotomous variable). Therefore, the most appropriate statistical procedure to achieve this objective was logistic regression. The dependent variable in this objective was "whether or not the student graduated." Therefore, being a binary dependent variable the most appropriate statistical procedure to accomplish the objective was logistic regression.

CHAPTER 4: RESULTS

The primary purpose of this study was to determine the influence of participation in career services activities and selected demographic characteristics on the persistence to graduation among undergraduate students at a research university-very high research activity (RU/VH) - in the Southern portion of the United States.

The following objectives were formulated to guide this study:

1. To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services on the following selected characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class
    f) ACT composite score
    g) College overall GPA
    h) First-generation student or not
    i) Whether or not employed as student employee while in college
    j) Nationality
    k) Whether or not the student participated in Greek life
    l) Athlete or not
    m) School/department in which enrolled
    n) Whether or not graduated

o) Time to degree completion

p) Type of career services used

2. To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services on the following selected characteristics;

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) School/department in which enrolled

n) Whether or not they graduated

o) Time to degree completion

3. To compare the group of students who entered a research university–very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services with the group of students who entered a research university–very high

research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services based on the following selected characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not

4. To compare career services users and non-users on their persistence to graduation as measured by number of months to degree completion.
5. To determine if a relationship exists between persistence to graduation as measured by time taken to degree completion in months and the following selected demographic characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

6. To determine if a model exists which explains a significant portion of variance in the persistence to graduation as measured by time to degree completion in months of college students at a research university- very high research activity (RU/VH) in the Southern portion of the United States from the following characteristics;

    a) Gender

    b) Race

    c) Age

    d) Whether or not the student had financial aid

    e) High school GPA

    f) Rank in high school class

    g) ACT composite score

    h) College overall GPA

    i) First-generation student or not

    j) Whether or not employed as student employee while in college

    k) Nationality

l) Whether or not the student participated in Greek life

m) Whether or not used career services

n) Type of career services used

7. To determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center.

a) Gender

b) Race

c) Age

d) Whether or not the student had financial aid

e) High school GPA

f) Rank in high school class

g) ACT composite score

h) College overall GPA

i) First-generation student or not

j) Whether or not employed as student employee while in college

k) Nationality

l) Whether or not the student participated in Greek life

m) Type of career services used

Objective One Results

The first objective was to describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services on the following selected characteristics;

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) School/department in which enrolled

n) Whether or not graduated

o) Time to degree completion

p) Type of career service used

Of the students who entered the university in Fall 2008, 58.2% (n = 2,986) used one or more of the programs or services offered by career services. The results of each variable for the 500 participants who were randomly selected from this group are as follows:

a) Gender

Of the 500 participants who used career services, 287 (57.4%) were identified as female and 213 students (42.6%) were identified as male.

b) Race

There were seven options upon which students identified their race, Black or African American, American Indian or Alaskan Native, Asian, Caucasian, Hispanic, Multi-racial, and Native Hawaiian or other Pacific Islander. Of the 500 randomly selected participants who used career services, 81.5% were identified as Caucasian (n=396), 10.5% were identified as African American (n=51), and less than 10% were either American Indian or Alaskan Native, Asian, Hispanic, or Native Hawaiian or other Pacific Islander(see Table 1. There were 14 study participants who did not provide information on their race.

Table 1 Race of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

Race	N	%
Caucasian	396	81.5
African American	51	10.5
Asian	23	4.7
Hispanic	14	2.9
American Indian or Alaskan Native	1	0.2
Native Hawaiian or other Pacific Islander	1	0.2
Total	486[a]	100

[a]14 students did not provide information regarding their race.

c) Whether or not the student had financial aid

This variable described whether or not a student had financial aid such as Scholarships or Fellowships. Of the 500 randomly selected students who used career services, 3% (n=15) did not have financial aid while the other 485 students (97%) had financial aid.

d) High school GPA

The high school grade point average (GPA) of study participants was calculated on a scale of 0 to 4. Of the 500 randomly selected students who used career services, five individuals did not have their high school GPA reported. The other 495 participants had a mean high school GPA of 3.41 (SD=.40) with a minimum GPA of 1.55 and a maximum of 4.0. This high school GPA was further examined as ranges of measurements to provide the distribution of scores using the following categories; less than 3.0, 3.0 to 3.24, 3.25 to 3.49, 3.50 to 3.74, 3.75 to 3.99, and 4.0. The range of measurements that had the largest group was 3.25 to 3.49 (n=114, 23.0%). Information regarding the number of students in each category of GPA scores is presented in

Table 2 High School Grade Point Average (GPA) of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

High School GPA Range	N	%
4.0	31	6.3
3.75 to 3.99	82	16.6
3.50 to 3.74	106	21.4
3.25 to 3.49	114	23.0
3.0 to 3.24	77	15.6
< 3.0	85	17.2
Total	495	100

Note. *M* = 3.41, *SD* = .40; Range = 1.55 to 4.0

e) Rank in high school class

The rank in high school class was a measure of a student's performance in comparison to his/her classmates. As such, it was provided as a rank number out of the total number of students in class. For the purpose of this study, the raw rank number was converted to a "Rank Score" in

order to make meaningful interpretation. The “Rank Score” was computed by dividing the rank by the total class size and multiplying by 100. For example, if a student was number 6 out of a class of 20 students, his /her rank score would be 30.0, and another one who was ranked number 6 out of 300 students in a class, his/her rank score would be 2.0. In this case, the smaller number would indicate a higher rank in class score. Of the 500 randomly selected students who used career services, 40 individuals did not have information regarding their rank in high school on record. The mean rank score for the other 460 participants was 25.60 (SD=20.65) with a minimum score of .21 and a maximum score of 95.37. The rank scores were further examined as ranges of measurements to provide the distribution of scores using various categories as outlined in Table 3. The range of measurements that had the largest group was 6 to 18.99 (n=135, 29.4%).

f) ACT composite score

Another variable on which students were described was ACT composite score. For the purpose of this study, the ACT composite score was used because it comprised the average score of all the four tests including English, Reading, Science, and Mathematics. The possible score range is from 1 to 36. Of the 500 randomly selected students who used career services, ACT composite score for 52 individuals were missing. The average ACT composite score for the other 448 students was 25.48 (SD=3.54) with a minimum score of 11 and a maximum of 34. The ACT composite score was further described as ranges of measurements as follows; 17 or less, 18 to 20, 21 to 23, 24 to 26, 27 to 29, 30 to 32, and 33 or higher (see Table 4). The range of measurements that had the largest group was 24 to 26 (n = 126, 28.1%)

Table 3 Rank in High School Class for Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

Rank in High School Class	N	%
<6	76	16.6
6 to 18.99	135	29.4
19 to 31.99	109	23.7
32 to 44.99	58	12.6
45 to 57.99	44	9.6
58 to 70.99	21	4.6
71 to 83.99	8	1.7
84>	8	1.7
Total	459	100

Note. M = 25.60, SD = 20.65; Range = .21 to 95.37

g) College overall GPA

The college overall grade point average (GPA) was used to describe the cumulative GPA a student obtained for undergraduate courses taken as of their last semester of enrollment as an undergraduate student. The college overall GPA of the 500 randomly selected students who used career services was 3.04 (SD=.58). To obtain the distribution of college overall GPA scores, ranges of measurements were examined using the following categories; less than 1.5, 1.5 to 1.99, 2.0 to 2.49, 3.0 to 3.49, 3.5 to 3.99, and 4.0. The range of measurements that had the largest group was 3.0 to 3.49 (n=176, 35.6%). Eight students (1.6%) had an overall GPA of less than 1.50 while five students (1.0%) obtained a perfect GPA of 4.0. A complete distribution of the range of college overall GPA scores is provided in Table 5.

Table 4 ACT composite score for Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

ACT composite score	N	%
17 or less	2	.4
18 to 20	26	5.8
21 to 23	118	26.3
24 to 26	126	28.1
27 to 29	108	24.1
30 to 32	57	12.7
33 or higher	11	2.5
Total	448	100

Note. M = 25.48, SD = 3.54; Range = 11 to 34

h) First-generation student or not

This variable was used to describe students on whether or not their parent(s) had a college degree. In other words, a first-generation student is one "whose parents' highest level of education is high school diploma or less" (NCES, 1998, p. 7). Of the 500 randomly selected students who used career services almost 20% were identified as first-generation students (n=97, 19.4%). The remaining 403 students (80.6%) had at least one parent with a college degree or higher.

i) Whether or not employed as student employee while in college

Of the 500 randomly selected students who used career services, 51.8% (n=259) were employed as student workers while in college. The remaining 48.2% students (n = 241) in this group were not employed as student workers while in college.

Table 5 College Overall Grade Point Average (GPA) of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

College overall GPA Range	N	%
4.0	5	1.0
3.5 to 3.99	107	21.6
3.0 to 3.49	176	35.6
2.50 to 2.99	126	25.5
2.0 to 2.49	60	12.1
1.50 to 1.99	60	12.1
<1.5	8	1.6
Total	495	100

Note. *M* = 3.04, *SD* = .58; Range = .00 to 4.0

j) Nationality

This variable was used to describe students based on their country of birth. Of the 500 randomly selected students who used career services, 97.6% were US citizens (n=488) and 12 individuals (2.4%) were non-US citizens. Among the 2.4% were two students from Vietnam, and one student each from Bangladesh, Germany, Honduras, India, Korea, Malaysia, Saudi Arabia, South Africa, Sri Lanka, and United Kingdom. For the purpose of further analysis, students were categorized into two groups (US citizen or non-US citizen).

k) Whether or not the student participated in Greek life

Another variable on which students were described was participation in Greek life such as fraternities and sororities**.** Of the 500 randomly selected students who used career services, 131 individuals (26.2%) participated in Greek life while 369 (73.8%) did not participate in Greek life.

k) Athlete or not

Of the 500 randomly selected students who used career services, there were 97.4% non-athletes (n=487) and 13 participants (2.6%) were identified as student-athletes.

l) School/department in which enrolled

Another variable on which subjects were described was school/department in which enrolled during their last semester. A total of nine departments had more than 3% of the students enrolled in their last semester (see Table 6). The schools/departments in which the largest groups were enrolled were Biological Sciences (n=30, 6.0%) and Mass Communication (n=30, 6.0%). A complete list of all the departments in which students who used career services were enrolled during their last semester is presented in Appendix B.

Table 6 Schools/Departments with more than 3% of the Students enrolled during their Last Semester for the Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services

School/Department	N	%
Biological Sciences	30	6.0
Mass Communication	30	6.0
Accounting	22	4.4
Mechanical Engineering	20	4.0
Elementary Grades Education	19	3.8
English	19	3.8
Physics	18	3.6
Marketing	17	3.4
Chemical Engineering	16	3.2

m) Whether or not graduated

Of the 500 randomly selected students who used career services, 434 participants graduated (86.8%) and 66 students (13.2%) had not graduated at the time of this study. Of those who graduated, 218 (50.2%) were awarded a Bachelor of Science (BS) degree, 81 individuals (18.7%) graduated with a Bachelor of Arts (BA), and 29 participants (6.7%) were awarded a Bachelor of Arts in Mass Communication (BAMC). Other degrees awarded had less than 20 participants. A complete list is presented in Appendix C.

n) Time to degree completion

Time to degree completion was measured by the length of time in months taken to complete a degree program. A total of 434 students graduated from the 500 randomly selected participants who used career services. Among this group the mean time taken to degree completion was 50.15 (SD = 7.51) months. The lowest time taken to degree completion was 24 months and the highest was 76 months.

o) Type of career services used

All the 500 randomly selected students who used career services were reported to participate in one or more services at the institution's career center. A complete list of these services is provided in Table 7. These services included;

- Use of the career center's Careers2Geaux system
- Maintaining a resume in the career center's Careers2Geaux system
- One or more appointments with the career center where career/major decision-making was a topic
- One or more appointments with the career center where experiential education (work while in school) was a topic

- One or more appointments with the career center where conducting a job search/job search tools was a topic
- Participation in one or more career events through the career center
- Interviewing on-campus through the career center
- Taking Myers-Briggs Type Indicator through the career center
- Taking the Strong Interest Inventory through the career center
- Taking the online assessment FOCUS-2 through the career center
- Taking the online assessment TypeFocus through the career center

Table 7 Types of Career Services Used by Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Type of Career Service	N	%
Careers2Geaux system	376	75.2
Career events	270	54
Resume in Careers2Geaux system	267	53.4
Job search	124	24.8
On-campus interview	91	18.2
Career/major decision-making	70	14
Strong Interest Inventory Test	60	12
Experiential education	33	6.6
MBTI test	33	6.6
FOCUS-2 assessment	25	5
TypeFocus assessment	18	3.6

The three services at the career center that had most participation included use of the Careers2Geaux system (n = 376, 75.2%), participation at one or more career events (n = 270, 54%), and maintaining a resume in the Careers2Geaux system (n= 267, 53.4%). On the other hand, less than 10% of the students were reported to participate in most of the personality tests and online assessments, for example, the MBTI test (n = 30, 6.6%), the FOCUS-2 assessment (n = 25, 5%), and the TypeFocus assessment (n = 18, 3.6%) (see Table 7).

Objective Two Results

The second objective was to describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services on the following selected characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not
m) School/department in which enrolled

n) Whether or not graduated

o) Time to completion

Of the students who entered university in Fall 2008, 41.8% (n = 2,147) did not use career services. The results of each variable for the 500 participants who were randomly selected from this group are as follows:

a) Gender

Of the 500 participants who did not use career services, 268 (53.6%) were identified as female and 232 students (46.4%) were identified as male.

b) Race

There were seven options upon which students identified their race, Black or African American, American Indian or Alaskan Native, Asian, Caucasian, Hispanic, Multi-racial, and Native Hawaiian or other Pacific Islander. Of the 500 randomly selected participants who did not use career services, 84.3% were identified as Caucasian (n=413) and the remaining had less than 10 % in each category including African American (n=40, 8.2%), Asian (n=15, 3.1%), and Hispanic (n=15, 3.1%). American Indian or Alaskan Native and Multi-racial had less than 10 participants (see Table 8). There were 10 individuals (2%) who did not provide information regarding their race.

c) Whether or not the student had financial aid

This variable described whether or not a student had financial aid such as scholarships or fellowships. Of the 500 randomly selected students who did not use career services, 95.6% (n=478) had financial aid and only 4.4% (n=22) did not have financial aid.

Table 8 Race of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did not use Career Services

Race	N	%
Caucasian	413	84.3
African American	40	8.2
Asian	15	3.1
Hispanic	15	3.1
American Indian or Alaskan Native	5	1.0
Multi-racial	2	0.4
Total	490	100

d) High school GPA

The high school grade point average of study participants was calculated on a scale of 0 to 4. Of the 500 randomly selected students who did not use career services, eight individuals did not have their high school grade point average on record. The other 492 participants had a mean high school grade point average of 3.29 (SD=.41) with a minimum GPA of 1.89 and a maximum of 4.0. This high school GPA was further examined as ranges of measurements to provide the distribution of scores using the following categories; less than 3.0, 3.0 to 3.24, 3.25 to 3.49, 3.50 to 3.74, 3.75 to 3.99, and 4.0. The range of measurements that had the largest group was less than 3.0 (n = 121, 24.6%). Information regarding the number of students in each category of GPA scores is presented in Table 9.

Table 9 High School Grade Point Average (GPA) of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did not Use Career Services

High School GPA Range	N	%
4.0	15	3.0
3.75 to 3.99	68	13.8
3.50 to 3.74	73	14.8
3.25 to 3.49	104	21.1
3.0 to 3.24	111	22.6
<3.0	121	24.6
Total	492	100

Note. *M*= 3.29, *SD*=.41; Range 1.89 to 4.0

e) Rank in high school class

The rank in high school class was a measure of a student's performance in comparison to his/her classmates. As such, it was provided as a rank number out of the total number of students in class. For the purpose of this study, the rank was converted in to a "Rank Score" in order to make meaningful interpretation. The "Rank Score" was computed by dividing the rank by the total class size and multiplying by 100. For example, if a student was number 3 out a class of 20 students, his /her rank score would be 15.0, and another one who was ranked number 3 out of 120 students in a class, his/her rank score would be 2.5. In this case, the smaller number would indicate a higher rank in class score. Of the 500 randomly selected students who did not use career services, 37 individuals did not have information regarding their rank in high school on record. The mean rank score for the other 463 participants was 31.10 (SD = 20.78) with a minimum score of .21 and a maximum score of 95.71. The rank scores were further examined as ranges of measurements to provide the distribution of scores using 8 categories displayed in

Table 10. The range of measurements that had the largest group was 19 to 31.99 (n = 120, 25.9%).

Table 10 Rank in High School Class for Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did not use Career Services

Rank in High School Class	N	%
<6	42	9.1
6 to 18.99	113	24.4
19 to 31.99	120	25.9
32 to 44.99	73	15.8
45 to 57.99	59	12.7
58 to 70.99	35	7.6
71 to 83.99	12	2.6
84>	9	1.9
Total	463	100

Note. M = 31.10, SD = 20.78; Range = .21 to 95.71.

f) ACT composite score

Another variable on which students were described was ACT composite score. For the purpose of this study, the ACT composite score comprising of the average score of all the four tests including English, Reading, Science, and Mathematics was used. Of the 500 randomly selected students who did not use career services, 46 individuals did not have their ACT composite score on record. The average ACT composite score for the other 454 students was 24.85 (SD=3.50) with a minimum score of 14 and a maximum of 35. These scores were further described as ranges of measurements as follows; 17 or less, 18 to 20, 21 to 23, 24 to 26, 27 to 29, 30 to 32, and 33 or higher (see Table 11).

Table 11 ACT Composite score for Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did not Use Career Services

ACT composite score	N	%
17 or less	3	.7
18 to 20	28	6.2
21 to 23	149	32.8
24 to 26	134	29.5
27 to 29	91	20.0
30 to 32	41	9.0
33 or higher	8	1.8
Total	454	100

Note. *M* = 24.85, *SD* = 3.50; Range = 14 to 35.

The range of measurements that had the largest group was 21 to 23 (n = 149, 32.8%).

g) College overall GPA

The college overall grade point average (GPA) was used to describe the cumulative GPA a student obtained for undergraduate courses taken as of their last semester of enrollment as an undergraduate student. The mean overall GPA was 2.49 (SD=.94). Students who had an overall GPA of less than 1.5 were 74 (15%) while six students (1.2%) obtained a perfect GPA score of 4.0. To obtain the distribution of college overall GPA scores, ranges of measurements were examined using the following categories; less than 1.5, 1.5 to 1.99, 2.0 to 2.49, 3.0 to 3.49, 3.5 to 3.99, and 4.0. The range of measurements that had the largest group was 2.50 to 2.99 (n = 112, 22.9%). The overall GPA measurements were not available for eight individuals among the 500 randomly selected students who did not use career services. A complete distribution of each range of college overall GPA scores is presented in Table 12.

Table 12 College Overall Grade Point Average (GPA) of Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did not use Career Services

College overall GPA Range	N	%
4.0	6	1.2
3.5 to 3.99	61	12.5
3.0 to 3.49	100	20.4
2.50 to 2.99	112	22.9
2.0 to 2.49	84	17.2
1.50 to 1.99	52	10.6
<1.5	74	15.1
Total	489	100

Note. M = 2.49, SD=.94; Range = .00 to 4.0

h) First-generation student or not

This variable was used to describe students on whether or not their parent(s) had a college degree. Of the 500 randomly selected students who did not use career services, 21% were identified as first-generation students (n=105). The remaining 395 students (79%) had at least one parent with a college degree or higher.

i) Whether or not employed as student employee while in college

Of the 500 randomly selected students who did not use career services, 72% (n=360), were not employed as student employees while in college while the other 28% (n=140) of students in this group were employed as student employees while in college.

j) Nationality

This variable was used to describe students based on their country of birth. Of the 500 randomly selected students who did not use career services, 98.6% were US citizens (n=493) and

seven individuals (1.4%) were countries outside the US. These included two (0.4%) and one (0.2%) participant each from Philippines, Saudi Arabia, South Africa, Sweden, and United Kingdom. As previously mentioned, students were categorized into two groups (US citizen or non-US citizen).

k) Whether or not the student participated in Greek life

Another variable on which students were described was participation in Greek life such as fraternities and sororities. Of the 500 randomly selected students who did not use career services, 79 individuals (15.8%) participated in Greek life while 421 (84.2%) did not participate in Greek life.

l) Athlete or not

Of the 500 randomly selected students who did not use career services, 19 participants (3.8%) were identified as student-athletes and the other 481 participants (96.2%) were non-athletes.

m) School/department in which enrolled

Another variable on which subjects were described was school/department in which enrolled during their last semester. A total of five departments had 3% or more of the students enrolled in their last semester (see Table 13). The schools/departments in which the largest group was enrolled was Biological Sciences (n = 49, 9.8%). A complete list of all the departments in which students who did not use career services were enrolled during their last semester is presented in Appendix D.

n) Whether or not graduated

Of the 500 randomly selected students who did not use career services, 190 participants (38%) graduated and 310 participants (62%) had not graduated at the time of this study. Of those

who graduated, 105 students (55.3%) were awarded a Bachelor of Science (BS) degree and 47 individuals (24.7%) graduated with a Bachelor of Arts (BA). Other degrees awarded had less than 10 participants. A complete list is presented in Appendix E.

Table 13 Schools/Departments with more than 3% of the Students enrolled during their Last Semester for the Students Who Entered a Research University –Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Did Not Use Career Services

School/Department	N	%
Biological Sciences	49	9.8
Pre-Nursing Junior Division	45	9.0
Kinesiology	44	8.8
Physics	15	3.0
Animal-Dairy-Poultry	15	3.0

o) Time to degree completion

This variable was measured by the length of time in months taken to complete a degree program. A total of 190 students graduated from the 500 randomly selected participants who did not use career services. Among this group, the mean time taken to degree completion was 49.57 (SD=7.50) months. The lowest time taken to degree completion was 33 months and the highest was 76 months. The majority of participants graduated in 45 months (n=90, 47.4%).

Objective Three Results

The third objective was to compare the group of students who entered a research university–very high research activity (RU/VH) in the southern portion of the United States in the Fall 2008 and used career services with the group of students who entered a research

university–very high research activity (RU/VH) in the southern portion of the United States in the Fall 2008 and did not use career services based on the following selected characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not

To accomplish this objective, Chi-square test of independence and independent t-test were used and an alpha level of 0.05 was set a priori. All categorical variables were analyzed for independence from the use of career services using the Chi-square test of independence. These included eight of the selected variables as follows: 1) gender; 2) race; 3) whether or not the student had financial aid; 4) first-generation student or not; 5) whether or not employed as student employee; 6) nationality; 7) whether or not the student participated in Greek life; and 8) athlete or not. Of these eight categorical variables, two were found to be statistically significant indicating that they were not independent of whether or not a student used career services. These variables were whether or not employed as student employee while in college and whether or not

the student participated in Greek life. Each of these two variables is examined further using the appropriate contingency table. The remaining six categorical variables that were compared were not statistically significant indicating that they were independent of whether or not a student used career services. Results of the Chi-square test analysis for all the categorical variables are presented in Table 14.

Whether or not employed as student employee while in college

When the group of students who used career services was compared to the group of students who did not use career services on whether or not employed as student employee while in college, the Chi-square value was statistically significant (χ^2 (1, n = 1000) = 59.05, p < .001). This indicated that whether or not employed as student employee while in college was not independent of the variable, career services use (whether or not a student used career services).

Table 14 Independence of Whether or Not Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services and Selected Demographic Characteristics

Variable	N	df	χ^2	P
Whether or not employed as student employee	1000	1	59.05	<.001
Whether or not the student participated in Greek life	1000	1	16.30	<.001
Race[a]	976	3	3.41	.333
Gender	1000	1	1.46	.227
Whether or not the student had financial aid	1000	1	1.38	.241
Nationality[b]	1000	1	1.34	.247
Athlete or not	1000	1	1.16	.281
First-generation student or not	1000	1	.40	.529

[a] Race categorized as African American, Asian, Caucasian, or Hispanic
[b] Whether or not a US citizen

The nature of the association between these variables was such that the majority of the students who used career services (n=259, 51.8%) were employed as student employee while the majority of the students who did not use career services (n=360, 72 %) were not employed as student employee (see Table 15).

Table 15 Cross-tabulation of Career Services Use and Whether or not Employed as Student Employee for Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable		Did not use Career service N %	Used Career service N %	Total N %
Not employed as student employee	N	360	241	601
	%	72.0	48.2	60.1
Employed as student employee	N	140	259	399
	%	28.0	51.8	39.9
Total	N	500	500	1000
	%	100	100	100

Note. χ^2 (1, n = 1000) = 59.05, p < .001

Whether or not the student participated in Greek life

Another variable on which the group of students who used career services and the group of students who did not use career services were compared was Whether or not the student participated in Greek life. The Chi-square test of independence value was statistically significant (χ^2 (1, n = 1000) = 16.30, p < .001) indicating that whether or not the student participated in Greek life was not independent of whether or not a student used career services. Results in the

contingency table (see Table 16) indicated that a higher percentage of the students who used career services (n=131, 26.2%) participated in Greek life than those who did not use career services (n=79, 15.8%).

Table 16 Cross-tabulation of Career Services Use and Whether or not Participated in Greek Life for Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable		Did not use Career service N %	Used Career service N %	Total N %
Did not participate in Greek life	N	421	369	790
	%	84.2	73.8	79.0
Participated in Greek life	N	79	131	210
	%	15.8	26.2	21.0
Total	N	500	500	1000
	%	100	100	100

Note. χ^2 (1, n = 1000) = 16.30, p < .001

To compare the group of students who used career services and the group of students who did not use career services based on the selected continuous variables, the independent t-test procedure was used with an a priori alpha level of 0.05. These variables included: 1) High school GPA; 2) Rank in high school class; 3) ACT composite score; and 4) College overall GPA. All the four continuous variables were found to have statistically significant differences (see Table 17).

College overall GPA

When the group of students who used career services was compared with the group of students who did not use career services on their college overall GPA, statistically significant difference was found ($t_{(818.52)} = 11.077$, $p = <.001$). The college overall GPA mean for the group of students who used career services was significantly higher ($M = 3.04$, $SD = .58$) than the college overall GPA mean ($M = 2.49$, $SD = .94$) for the group of students who did not use career services (see Table 17).

High school GPA

The group of students who used career services and the group of students who did not use career services were also compared on their high school GPA. Results of the independent t-test revealed a significant difference ($t_{(985)} = 4.844$, $p = <.001$) in the high school GPA between these two groups. The mean high school GPA for the group of students who used career services was significantly higher ($M = 3.41$, $SD= .39$) than the mean high school GPA for the group of students who did not use career services ($M = 3.29$, $SD = .41$) (See Table 17).

Rank in high school class

As previously described this variable was converted to a rank score to enable meaningful analysis and interpretation. When the group of students who used career services and the group of students who did not use career services were compared on the high school class rank score, a statistically significant difference was found ($t_{(921)} = 4.064$, $p = <.001$). The mean rank score for the students who used career services was lower ($M = 25.56$, $SD = 20.65$) than the mean rank score for the group of students who did not use career services (($M =31.10$, $SD =20.78$) (see Table 17). These results indicate that students who used career services ranked higher in their

high school class than students who did not use career services since a lower rank score indicated that the student had a higher class rank.

Table 17 Comparison of the Group of Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008 and Used Career Services Versus Those who Did Not Use Career Services on Selected Variables Academic Characteristics

Variable	Career services use	N	M	SD	t	df	P
	No	492	2.49	.94			
Overall GPA					11.077	818.52	<.001
	Yes	500	3.04	.58			
	No	492	3.29	.41			
High School GPA					4.844	985	<.001
	Yes	495	3.41	.39			
	No	463	31.10	20.78			
Rank in high school					4.064	921	<.001
	Yes	460	25.56	20.65			
	No	454	24.85	3.50			
ACT Composite					2.677	900	.008
	Yes	448	25.48	3.54			

ACT Composite

The difference in ACT composite score for the group of students who used career services and the group of students who did not use the career services was found to be statistically significant ($t_{(900)} = 2.677$, $p = <.008$). For the group of students who used career

services, the mean ACT composite score was significantly higher (M = 25.48, SD = 3.54) than the mean ACT composite score for the group of students who did not use career services (M = 24.85, SD = 3.50) (see Table 17).

Objective Four Results

The fourth objective was to compare career services users and non-users on their persistence to graduation as measured by number of months to degree completion. Persistence in this study was defined as completion of a degree program over time. As such, this objective was comprised of two components; a) comparing career services users and non-users on their degree completion (Whether or not the student had graduated) and b) comparing career services users and non-users on the time taken in months to degree completion (including only those who graduated).

a) Whether or not the student graduated

To accomplish the first component, comparing career services users and non-users on whether or not the student graduated, a Chi-square test of independence was conducted using an alpha level of 0.05 set a` priori. The computed Chi-square value (χ^2 (1, n = 1000) = 253.75, p < .001) was statistically significant indicating that degree completion (whether or not the student graduated) was not independent of whether or not they used career services. The high Chi-square value indicated that whether or not the student graduated had a high level of association with whether or not they used career services. When this data were examined in the relevant contingency table, the researcher observed that the majority of the students who used career services (n=434, 86.8%) graduated while the majority of the students who did not use career services (n=310, 62%) did not graduate. These results are presented in Table 18.

Table 18 Comparison of the Career Services Users and Non-users on Whether or Not the Student Graduated for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable		Did not use Career service	Used Career service	Total
		N %	N %	N %
Did not Graduate	N	310	66	376
	%	62.0	13.2	37.6
Graduated	N	190	434	624
	%	38.0	86.8	62.4
Total	N	500	500	1000
	%	100	100	100

Note. χ^2 (1, n = 1000) = 253.75, p < .001

b) Time Taken to Degree Completion

To accomplish the second component, comparing career services users and non-users on the time taken to degree completion in months, an independent t-test was conducted using an a` priori alpha level of 0.05. Results of the independent t-test analysis were not statistically significant ($t_{(622)}$ = -.898, p =.370) indicating that the time to degree completion for the group of students who used career services (M = 50.15, SD = 7.51) and the group of students who did not use career services (M =49.57, SD =7.48) did not differ significantly (see Table 19).

Table 19 Comparison of the Career Services Users and Non-users on the Time Taken in Months to Degree Completion for Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable	Career services use	N	M	SD	t	df	P
	No	190	49.57	7.48			
Time to completion					.898	622	.370
	Yes	434	50.15	7.51			

Objective Five Results

The fifth objective was to determine if a relationship exists between persistence to graduation as measured by time to degree completion in months and the following selected demographic characteristics;

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

This objective involved only those students who graduated irrespective of whether or not they used career services. To accomplish the objective, three statistical procedures were applied based on the level of measurements of the variables. The Pearson product moment correlation coefficient was used to estimate the relationship between persistence and variables measured at an interval level (high school GPA, ACT composite score, rank in high school class, and college overall GPA). Results indicated a statistically significant relationship between each of these four variables and persistence as measured by time taken in months to degree completion. These results are presented in Table 20.

Table 20 Relationship between Time to Degree Completion and the Selected Academic Characteristics for Students who Entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable	N	r	p
College Overall GPA	624	-.49	<.001
ACT composite score	566	-.24	<.001
High School GPA	615	-.20	<.001
Rank Score in High School Class	579	.16[a]	<.001

[a] For this variable lower values indicated high class ranks

College Overall GPA

The estimated correlation between college overall GPA and persistence to graduation (r = -.49, p = <.001) as measured by time taken in months to degree completion was significant and indicated a moderate association (see Table 20). Correlation coefficients of .20 to .49 are considered to have a moderate negative association according to Davis (1971). This correlation between college overall GPA and persistence suggests that students with a higher GPA tended to take a shorter time to graduate than students with a lower GPA.

ACT composite score

There was a significant correlation between ACT composite score ($r = -.24$, $p = <.001$) and persistence to graduation as measured by time taken in months to degree completion. This relationship suggests that students with high ACT composite score are more likely to take a shorter time to graduate than students who have low ACT composite score (see Table 20).

High School GPA

The relationship between high school GPA and persistence to graduation as measured by time taken in months to degree completion was significant ($r = -.20$, $p = <.001$) (see Table 20). This indicated a low association and suggests that participants who had a higher GPA at high school were likely to take a shorter time to complete their degree program than participants who had a low GPA at high school.

Rank Score in High School Class

Results for the correlation between rank score in high school class and persistence to graduation as measured by time taken in months to degree completion was significant ($r = .16$, $p = <0.001$) (see Table 20). This indicated a low association (Davis, 1971) between the two variables. The relationship between rank score in high school and persistence to graduation suggests that a student with a low rank score in high school is more likely to take a shorter time to graduate than a student with a high rank score in high school. As previously discussed, a low rank score indicates better performance in high school class.

The statistical procedure used to estimate the relationship between all the selected nominal-dichotomous variables and persistence to graduation as measured by time taken in months to degree completion was the independent t-test and the results are presented in Table 21.

Table 21 Relationship between Selected Variables and Persistence to Graduation for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable		N	M	t	df	P
	Female	340	48.74			
Gender				4.553	577.77	<.001
	Male	284	51.46			
	No	463	50.48			
Greek life				3.012	313.19	<.003
	Yes	161	48.54			
	No	309	50.69			
Student employee				2.372	622	.018
	Yes	315	49.27			
	No	517	49.74			
First-generation				1.767	622	.078
	Yes	107	51.14			
	Non-US	14	48.36			
Nationality				.816	622	.415
	US	610	50.01			
	No	606	50.01			
Athlete				.719	622	.472
	Yes	18	48.72			
	No	17	48.71			
Financial Aid				.708	622	.479
	Yes	607	50.01			

These nominal-dichotomous variables included gender, whether or not the student had financial aid, first- generation student or not, nationality, whether employed or not while in college, whether or not the student participated in Greek life, and athlete or not. Out of these seven nominal-dichotomous variables, three were found to have significant differences in the time to degree completion. They included gender, whether or not the student participated in Greek life, and whether or not employed as student employee. The other variables (whether or not the student had financial aid, first-generation student or not, nationality, and athlete or not) did not show significant difference on persistence to graduation as measured by time to degree completion in months (see Table 21).

Gender

When participants who persisted to graduation were compared on their gender, a significant difference ($t_{(577.77)} = 4.553$, $p = <.001$) was found between time to degree completion in months for female and male students. The difference was such that female students had a lower mean for time taken to degree completion (M = 48.74, SD = 7.05) than male students (M = 51.46, SD = 7.77) (see Table 21).

Whether or not the student participated in Greek life

The results of the independent t-test revealed a significant difference ($t_{(313.19)} = 3.012$, $p = .003$) in persistence to graduation for students who participated in Greek life and those who did not participate in Greek life. Students who participated in Greek life had a significantly lower mean for time taken to degree completion (M= 48.54, SD = 6.78) than students who did not participate in Greek life (M = 50.48, SD = 7.68) (see Table 21).

Whether or not employed as student employee while in college

Another variable on which the relationship to persistence was assessed was on Whether or not employed as student employee while in college. The results indicated significant difference in persistence ($t_{(622)} = 2.372$, $p = .018$) whereby students who were employed as student employee took a slightly shorter time to graduate ($M = 49.27$, $SD = 7.22$) than students who were not employed as student employee (($M = 50.69$, $SD = 7.72$) (see Table 21).

The other statistical procedure conducted to achieve this objective was analysis of variance (ANOVA) to measure the relationship between persistence to graduation and ethnicity. Unlike the other selected categorical variables, race had more than two levels and therefore, ANOVA was the most appropriate statistical procedure due to its ease in interpretation of the findings. Race had seven groups but three (American Indian or Alaskan Native, Multi-Racial, and Native Hawaiian or other Pacific Islander) were excluded from this analysis because they had two or less cases. The other four groups (African American, Asian, Caucasian, and Hispanic) had more than two cases and were included in the analysis. The results are presented in Table 22 and indicate a significant difference ($F (3, 602) = 6.84$, $p = <.001$) between two or more groups. In order to determine which groups were significantly different, a post-hoc analysis was conducted using Tukey HSD (see Table 22). The findings indicate significant differences between African American and each of the other groups (Asian, Caucasian, and Hispanic). The difference was such that African Americans had a higher mean for time to degree completion in months, indicating that they took a longer time to graduate compared to the other racial groups. Hispanics had the lowest mean to degree completion, followed by the Asians, and Caucasians (see Table 22).

Table 22 ANOVA Results of the Relationship between Persistence to Graduation and Race for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

	df	MS	F	P
Between Groups	3	379.82	6.84	<.001
Within Groups	602	55.52		
Total	605			

Variables in the Equation			
Ethnicity	N	M	Tukey HSD[a]
Hispanic	20	47.20	A
Asian	22	47.68	A
Caucasian	515	49.87	A, B
African American	49	54.18	B

Note. [a] Groups that do not have a common letter are significantly different

Objective Six Results

The sixth objective was to determine if a model exists which explains a significant portion of variance in the persistence to graduation as measured by number of years to program completion of college students at a research university- very high research activity (RU/VH) in the Southern portion of the United States from the following characteristics;

a) Gender

b) Race

c) Age

d) Whether or not the student had had financial aid

e) High school GPA

f) Rank in high school class

g) ACT composite score

h) College overall GPA

i) First-generation student or not

j) Whether or not employed as student employee while in college

k) Nationality

l) Whether or not the student participated in Greek life

m) Whether or not they used career services

n) Type of career services used

To accomplish this objective, a multiple regression analysis was conducted. This was selected as the most appropriate statistical procedure because the dependent variable (persistence to graduation) was measured on a continuous level by time to degree completion in months. The selected independent variables included categorical and interval level variables. To allow for meaningful analysis and interpretation of the results, any categorical variable that had more than two levels was binary coded, for example, race. Race was recoded into four dichotomous variables as follows; African American or not, Asian or not, Caucasian or not, and Hispanic or not. For the types of career services, each identified service was entered as a single variable coded as whether or not the service was used.

Bivariate relationships using Pearson product moment correlations were examined using the time to degree completion as the dependent variable with the selected variables and services of the career center as the independent variables. These results are presented in Table 23. Of all the selected independent variables, 13 were found to have significant correlations with persistence to graduation as measured by time to degree completion in months. Of these variables, Overall GPA had the highest correlation ($r = -.50$, $p = <.001$) followed by ACT

composite (r = -.24, p = <.001) and High school GPA (r = -.21, p = <.001). Among the types of career services, Experiential education (r = .10, p = .01), use of the Careers2Geaux system (r = .09, p = .02), and having a resume uploaded to the Careers2Geaux system (r = .09, p = .02) had significant correlations with time to degree completion.

Table 23 Relationship between Selected Characteristics and Services of the Career Center and Time to Degree Completion for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

Variable	R	p	Variable	R	p
Overall GPA	-.50	<.001	Career service use	.06	.07
ACT composite	-.24	<.001	Career test Focus2	-.06	.08
High school GPA	-.21	<.001	Attend career event	.06	.11
Rank Score	.17	<.001	Interviewed	.05	.15
Gender	.17	<.001	Career Test Type Focus	.04	.19
African American	.17	<.001	Citizen	-.03	.22
Greek life	-.14	.001	Asian	-.03	.23
Experiential Education	.10	.01	Career test Strong	-.03	.29
C2G Resume	.09	.02	Athlete	-.02	.31
Hispanic	-.09	.02	Job Search Appointment	.02	.32
Careers2Geaux system	.09	.02	Financial Aid	-.02	.35
First-Generation	.08	.04	Career Test MBTI	-.01	.38
Caucasian	-.08	.04	Career decision Making	-.00	.47
Student Employee	-.07	.06			

Note. N = 529

After examining the correlations, the researcher checked for multicollinearity using the variance inflation factor (VIF) and the Tolerance measures. The range for VIF values was 1.000

to 1.021 indicting that collinearity was not an issue since the values were less than the common cutoff threshold of 10 (Hair et al., 2006). Similarly, the Tolerance values in this analysis, which ranged from .979 to1.000, were greater than the cutoff threshold of .10 (Hair et al., 2006) indicating no issue of excessive collinearity.

The multiple regression analysis produced a statistically significant model. These results are presented in Table 24. The variable which entered the regression model first was the overall GPA and was found to be statistically significant (F (1, 527) = 173.03; p = <.001) explaining 24.7 % of the variance in time to degree completion.

Table 24 Multiple Regression Analysis of Students Persistence to Graduation on Selected Variables and Services of the Career Center for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

	Df	MS	F	P
Regression	1	2063.86	49.48	<.001
Residual	527	41.71		
Total	528			

Variables in the Equation					
Variable	R^2	R^2 Change	F Change	Sig. F Change	Beta
Overall GPA	.247	.247	173.03	<.001	-.49
Experiential Education	.257	.010	7.09	.008	.09
Gender	.266	.009	6.22	.013	.10
Hispanic	.274	.008	5.98	.015	-.09

Note. N = 529

The overall GPA also had the highest Beta coefficient (β = -.49, p = <.001) indicating that it had the highest influence in predicting the criterion variable, persistence to degree

completion as measured by time to degree completion in months. This influence was such that a lower overall GPA increased the time to degree completion. The second variable which entered the regression model was the career center's experiential education program which explained an additional 1% of the variance in persistence as measured by time to degree completion in months. Its Beta coefficient ($\beta = .09$, $p = .008$) was significant indicating that participation in experiential education programs at the career center increased the time to degree completion. Gender entered the regression model next and explained an additional 0.9% of the variance in persistence. The Beta coefficient ($\beta = .10$, $p = .013$) for the gender was significant indicating that male students took a longer time to graduate compared to female students when all other variables are held constant.

The category "Hispanic" in the race variable entered fourth into the regression model explaining 0.8% of the variance in persistence. Hispanic had a significant negative Beta coefficient ($\beta = -.09$, $p = <.015$) indicating that students who were identified as Hispanic took a shorter time to graduate compared to students who were not Hispanic. The overall model, including all the four variables, was statistically significant ($F (4, 524) = 49.48$; $p = <.001$) explaining 27.4 % of the variance in persistence as measured by time taken to degree completion in months.

Objective Seven Results

The seventh objective was to determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center.

a) Gender

b) Race

c) Age

d) Whether or not they had financial aid

e) High school GPA

f) Rank in high school class

g) ACT composite score

h) College overall GPA

i) First-generation student or not

j) Whether or not employed as student employee while in college

k) Nationality

m) Whether or not the student participated in Greek life

l) Type of career services used

The dependent variable in this objective was "whether or not the student graduated." Therefore, being a binary dependent variable the most appropriate statistical procedure to accomplish the objective was logistic regression. All the selected independent variables were entered using forward stepwise method. The null (baseline) model generated before any explanatory variables were entered predicted an overall percentage of 63.7. After the variables were entered, six models were generated. To assess the overall model fit, three approaches can be used according to Hair et al. (2006). These include; statistical measures, pseudo R^2, or classification accuracy. In this case, the statistical and pseudo R^2 measures were used to assess the overall model fit. The model that was determined to be the model of best fit included four variables with an overall R^2 value of .67 (Nagelkerke R^2 = .67), meaning it explained 67% of the variance in persistence to graduation.

In addition, this model resulted in a -2 log likelihood (-2LL) value of 533.89, which was a significant reduction ($\chi^2_{(1)} = 364.82$, $p < 001$) from the initial -2LLvalue of 722.36. According to Hair et al. (2006), a lower -2LL value indicates a better model fit. Additionally, this model was determined to be the model of best fit on the basis of the Hosmer and Lemeshow Test results ($\chi^2_{(8)} = 9.42$, $p = .31$) . A non-significant Hosmer and Lemeshow test result indicates a better model fit (Hair et al., 2006) since it suggests that there was no significant difference between the predicted model and the observed model. The results of the logistic regression are presented in Table 25. It includes the four variables that were entered into the explanatory model that was determined to be the model of the best fit, as well as a list of all the other variables that were not included in the explanatory model. The discussion will focus on the four variables that were found to have significant contribution to the explanatory model (overall GPA, Career2Geaux system use, gender, and job search appointments).

When the explanatory model was examined (see Table 25), the findings indicated the highest Wald statistic in overall GPA ($\chi^2_{(1)} = 139.60$, $p = <.001$). This indicated a significant contribution to the explanatory model and the positive beta coefficient ($\beta = 2.62$) suggests that a higher overall GPA is associated with a higher likelihood of the student graduating. The odds ratio of 13.74 suggests that an increase by one point in overall GPA increases the likelihood to persist to graduation by 13.74 times when all other predictors are held constant.

The use of the Careers2geaux system at the career center was another variable that entered into the explanatory model and had a significant contribution ($\chi^2_{(1)} = 84.75$, $p = <.001$). The positive beta coefficient ($\beta = 2.89$) indicated that students who used the Careers2geaux system were more likely to persist to graduation. The odds ratio of 17.94 suggests that use of the Careers2geaux system at the career center increased the likelihood of persisting to graduation by

Table 25 Logistic Regression Analysis Results of Students' Persistence to Graduation on Selected Variables and Services of the Career Center for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

	χ^2	Df	P
Model	553.29	4	<.001

Variables in the Equation

Variable	B	Wald	df	p	(Exp (B)
Overall GPA	2.62	139.60	1	<.001	13.74
Careers2Geaux System	2.89	84.75	1	<.001	17.94
Gender	-1.06	20.52	1	<.001	.35
Job Search Appointment	2.06	9.51	1	.002	7.88

Variables not in the Equation

Variable	Score	Sig.	Variable	Score	Sig.
High school GPA	7.60	.01	C2G Resume	1.48	.22
Rank Score	4.91	.03	Citizen	1.42	.23
Asian	3.83	.05	Attend career event	1.24	.27
Student Employee	3.71	.05	Career service score	.97	.33
Hispanic	2.87	.09	Caucasian	.72	.40
Interviewed	2.64	.10	First-Generation	.62	.43
Career Test Type Focus	2.49	.12	Career test Focus2	.47	.49
African American	1.95	.16	Career test Strong	.23	.64
Greek life	1.85	.17	Athlete	.09	.77
Career Test MBTI	1.60	.21	Experiential Education	.05	.82
ACT Composite	1.53	.22	Career decision Making	.01	.93

17.94 times after controlling for other predictor variables (see Table 25). Another variable included in the explanatory model was gender. It was found to have a significant contribution ($\chi^2_{(1)}$ =20.52, p = <.001). The nature of the contribution (β =-1.06) was such that male students were less likely to persist to graduation than female students and their odds to graduation decreased by .35 times when compared to female students, all other variables held constant.

Participation in job search appointments at the career center also entered the explanatory model and was found to have a significant contribution ($\chi^2_{(1)}$ =9.51, p = .002) (see Table 25). A positive beta coefficient (β =2.06) indicated that participation in job search appointments increased the likelihood of persisting to graduation. The odds ratio of 7.88 suggests that the odds of persisting to graduation is 7.88 times greater for students who participated in job search appointments at the career center when all other predictor variables are held constant.

To determine the effectiveness of the identified model of best fit in correctly classifying subjects as to whether or not they persisted to graduation, the classification results were examined. Overall, this statistically significant four-variable model correctly classified 85.4% cases of students who graduated or did not graduate, an improvement from the null model which predicted an overall percentage of 63.7%. The classification results are presented in Table 26.

Table 26 Classification Results of Students' Persistence to Graduation for Students who entered a Research University–Very High Research Activity (RU/VH) in the Southern Portion of the United States in the Fall 2008

	Predicted		
Observed	Did not Graduate	Graduated	Percentage Correct
	N	N	
Did not Graduate	233	68	77.4
Graduated	53	476	90.0
Overall Percentage	34.5	65.5	85.4

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Purpose and Specific Objectives

The primary purpose of this study was to determine the influence of participation in career services activities and selected demographic characteristics on the persistence to graduation among undergraduate students at a research university-very high research activity (RU/VH) - in the Southern portion of the United States. The primary dependent variable was persistence to graduation as measured by time to degree completion in months.

The following objectives were developed to facilitate the accomplishment of this study:

1. To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services on the following selected characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class
    f) ACT composite score
    g) College overall GPA
    h) First-generation student or not
    i) Whether or not employed as student employee while in college
    j) Nationality
    k) Whether or not the student participated in Greek life
    l) Athlete or not

m) School/department in which enrolled

n) Whether or not graduated

o) Time to degree completion

p) Type of career services used

2. To describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services on the following selected characteristics;

a) Gender

b) Race

c) Whether or not the student had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) School/department in which enrolled

n) Whether or not they graduated

o) Time to degree completion

3. To compare the group of students who entered a research university–very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services with the group of students who entered a research university–very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services based on the following selected characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class
    f) ACT composite score
    g) College overall GPA
    h) First-generation student or not
    i) Whether or not employed as student employee while in college
    j) Nationality
    k) Whether or not the student participated in Greek life
    l) Athlete or not
4. To compare career services users and non-users on their persistence to graduation as measured by number of months to degree completion.
5. To determine if a relationship exists between persistence to graduation as measured by time taken to degree completion in months and the following selected demographic characteristics;

a) Gender
b) Race
c) Whether or not the student had financial aid
d) High school GPA
e) Rank in high school class
f) ACT composite score
g) College overall GPA
h) First-generation student or not
i) Whether or not employed as student employee while in college
j) Nationality
k) Whether or not the student participated in Greek life
l) Athlete or not

6. To determine if a model exists which explains a significant portion of variance in the persistence to graduation as measured by time to degree completion in months of college students at a research university- very high research activity (RU/VH) in the Southern portion of the United States from the following characteristics;
    a) Gender
    b) Race
    c) Whether or not the student had financial aid
    d) High school GPA
    e) Rank in high school class
    f) ACT composite score
    g) College overall GPA
    h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) Whether or not used career services

n) Type of career services used

7. To determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center.

a) Gender

b) Race

c) Whether or not the student had had financial aid

d) High school GPA

e) Rank in high school class

f) ACT composite score

g) College overall GPA

h) First-generation student or not

i) Whether or not employed as student employee while in college

j) Nationality

k) Whether or not the student participated in Greek life

l) Athlete or not

m) Type of career services used

Summary of Methodology

The target population for this study was all undergraduate students enrolled at a research university –very high research activity (RU/VH) in the Southern portion of the United States. The accessible population was undergraduate students at one selected research university –very high research activity (RU/VH) in the Southern portion of the United States. The sample for this study was undergraduate students who entered in Fall 2008 at one selected research university – very high research activity (RU/VH) in the Southern portion of the United States. Using stratified random sampling, the drawn sample comprised of two groups of 500 students each for students who used career services and those who did not use career services.

The data were obtained from the selected institution's office of the registrar and the career center. The office of the registrar provided information regarding the participants' selected characteristics as identified through a review of related literature and the institution's database. The career center provided information regarding the students who utilized career services (and specific activities they participated in) and those who did not use any career services. The information from the registrar's office and the career center were merged into one file, and any individual identifier was deleted, making the study completely anonymous.

The instrument for this study consisted of a computerized recording form designed by the researcher. The form included all relevant variables as identified by the researcher based on a review of related literature and information obtained from the offices of the registrar and the career center of the one selected research university –very high research activity (RU/VH) in the Southern portion of the United States. Permission for the study was requested and received from the university's Institutional Review Board (IRB).

Data analysis was conducted based on the specific objectives of the study. Objectives one and two were mainly descriptive and therefore, descriptive statistics were used. For all categorical variables, frequencies and percentages were reported while any variable measured on an interval level was described using means and standard deviations. For the third and fourth objectives, comparison statistics were used. All categorical variables were compared using Chi-square test of independence while continuous variables were compared using independent t-test. Objective five involved determining the relationship between the dependent and independent variables. Therefore, the most appropriate statistical procedures were the Pearson product moment correlation for variables measured on an interval scale, independent t-test for nominal-dichotomous variables, and ANOVA for categorical variables. These procedures were selected as the most appropriate for ease of interpretation of the relevant findings. Objectives six and seven were best accomplished using regression analysis. Multiple regression analysis was the most appropriate statistical procedure to achieve objective six because the dependent variable, persistence to graduation, was measured on a continuous scale as time to degree completion in months. On the other hand, logistic regression analysis was the most appropriate statistical procedure to accomplish objective seven since the dependent variable was measured on a dichotomous variable, whether or not the student graduated.

Summary of Major Findings

The major findings are presented by the specific objectives developed for this study.

A) Objective 1

The first objective was to describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and used career services on the selected characteristics. Of the 500 students who used career services,

females were slightly more (n = 287, 57.4%) than males (n = 213, 42.6%). An overwhelming majority of the students in this group were Caucasian (n = 396, 81.5%), 10.5% (n = 51) were African American, and less than 10% were either American Indian or Alaskan native, Asian, Hispanic, or Native Hawaiian or other Pacific Islander. Almost all the students who used career services had financial aid (n = 485, 97%). The high school GPA ranged from 1.55 to 4.0 (M = 3.41, SD = .40) with the largest group falling in the 3.25 to 3.49 range of measurements category (n = 114, 23%). The mean rank score in high school class was 25.60 (SD = 20.65) with a minimum score of .21 and a maximum score of 95.37. A lower score indicated a higher rank in high school class and the range of measurements that had the largest group was 6 to 18.99 (n=135, 29.4%).

The ACT composite score was available for 448 students in the group that used career services and their mean score was 25.48 (SD=3.54). The minimum score was 11 and the maximum was 34 with the largest group of students (n = 126, 28.1%) falling in the 24 to 26 range of measurements category. The mean overall GPA for the students who used career services was 3.04 (SD = .58). When observed as a range of measurements, the category that had the largest group (n= 176, 35.6%) was 3.0 to 3.49. Among the 500 students who used career services, 19.4 % (n = 97) were first-generation students and 80.6% (n = 403) had at least one parent with a college degree or higher. Slightly more than half of the students who used career services were employed as student employee while in college (n = 259, 51.8%). The vast majority of the students who used career services were US citizens (n = 488, 97.6%) while the other 2.4% (n= 12) came from different countries outside the US. Regarding participation in Greek life, 131 students (26.2%) of the students who used career services participated in Greek

life while 369 individuals (73.8%) did not participate in Greek life. There were 13 individuals identified as student-athletes (2.6%) among this group of students who used career services.

An overwhelming majority of the students who used career services persisted to graduation (n = 434, 86.8%) with about half (n = 218, 50.2%) being awarded a Bachelor of Science (BS) degree. The mean time to degree completion was 50.15 months which ranged from 24 to 76 months. The top four departments that had students enrolled in their last semester were; Biological Sciences (n=30, 6.0%), Mass Communication (n=30, 6.0%), Accounting (n=22, 4.4%), and Mechanical Engineering (n=20, 4%). Students who used career services were reported to use one or more services at the institution's career center. The top three career services reported to have most participation included use of the Careers2Geaux system (n=383, 76.6%), participation at one or more career events (n-280, 56%), and maintaining resume in the Careers2Geaux system (n=263, 52.6%).

B) Objective 2

The second objective was to describe students who entered a research university –very high research activity (RU/VH) in the Southern portion of the United States in the Fall 2008 and did not use career services on the selected characteristics. The findings showed that there were more females (n = 268, 53.6%) than males (n = 232, 46.4%). Similarly to the group of students who used career services, the majority of the students who did not use careers services were Caucasian (n = 413, 84.3%). The other race groups had less than 10 % in each category. Regarding financial aid, as with the group that used career services, the largest group of the students who did not use career services had financial aid (n = 478, 95.6%). The high school GPA ranged from 1.89 to 4.0 (M = 3.29, SD = .41) with the largest group falling in the less than 3.0 range of measurements category (n = 121, 24.6%). The mean rank score in high school class

was 31.10 (SD = 20.78) with a minimum score of .21 and a maximum score of 95.71. As previously mentioned, a lower score indicated a higher rank in high school class and the range of measurements that had the largest group was 19 to 31.99 (n=120, 25.9%).

The mean ACT composite score for 454 students in the group that did not use career services was 24.85 (SD=3.50). The minimum score was 14 and the maximum was 35 with the largest group of students (n = 149, 32.8%) falling in the 21 to 23 range of measurements category. The mean overall GPA for the students who did not use career services was 2.49 (SD = .94). When observed as a range of measurements, the category that had the largest group (n= 112, 22.9%) was 2.50 to 2.99. Among the 500 students who did not use career services, 21 % (n = 105) were first-generation students and 79% (n = 395) had at least one parent with a college degree or higher. A larger proportion of the students who did not use career services were not employed as student employee while in college (n = 360, 72%). Similarly to the group that used career services, the vast majority of the students who did not use career services were US citizens (n = 493, 98.6%). Regarding participation in Greek life, the largest group (421, 84.2%) of the students who did not use career services did not participate in Greek life. There were 19 individuals identified as student-athletes (3.8%) among this group of students who did not use career services.

A smaller proportion (n = 190, 38%) of the students who did not use career services persisted to graduation compared to those who did not graduate (n = 310, 62%). Slightly more than half of those who graduated were awarded a degree in Bachelor of Science (BS) (n = 105, 55.3%). The mean time to degree completion was 49.57 (SD = 7.50) months which ranged from 33 to 76 months. The departments that had more than 15 students enrolled in their last semester

were; Biological Sciences (n=49, 9.8%), Pre-Nursing Junior Division (n=45, 9.0%), and Kinesiology (n=44, 8.8%).

C) Objective 3

The third objective was to compare the group of students who used career services and the group of students who did not use career services on the selected characteristics. Eight of the selected variables were compared using the Chi-square test of independence since they were measured on a categorical scale. The findings from the Chi-square test analysis found two of these variables to be statistically significant indicating that they were not independent of whether or not a student used career services. The first one was whether or not employed as student employee while in college (χ^2 (1, n = 1000) = 59.05, p < .001). Results in the contingency table showed that the majority of the students who used career services (n=259, 51.8%) were employed as student employee while the majority of the students who did not use career services (n=360, 72 %) were not employed as student employee.

The second variable found to be statistically significant was whether or not the student participated in Greek life (χ^2 (1, n = 1000) = 16.30, p < .001). This indicated that whether or not the student participated in Greek life was not independent of whether or not a student used career services. Results in the contingency table indicated that a higher percentage of the students who used career services (n=131, 26.2%) participated in Greek life than those who did not use career services (n=79, 15.8%).

The other six categorical variables on which the two groups were compared were not found to be statistically significant. This indicated that they were independent of whether or not a student used career services. Results of the Chi-square test analysis for these six variables are as follows;

- Race: χ^2 (3, n = 976) = 3.41, p = .333
- Gender: χ^2 (1, n = 1000) = 1.46, p = .227
- Whether or not the student had financial aid: χ^2 (1, n = 1000) = 1.38, p = .241
- Nationality: χ^2 (1, n = 1000) = 1.34, p = .247
- Athlete or not: χ^2 (1, n = 1000) = 1.16, p = .281
- First-generation student or not: χ^2 (1, n = 1000) = .40, p = .529

To compare the two groups (those who used career services and those who did not use career services) on the selected variables measured on an interval scale, the independent t-test was used using a` priori alpha level of 0.05. These variables included: high school GPA, rank in high school class, ACT composite score, and college overall GPA, and were all found to have statistically significant differences.

For the overall GPA, statistically significant difference was found ($t_{(818.52)}$ = 11.077, p = <.001) where the college overall GPA mean for the group of students who used career services was significantly higher (M = 3.04, SD = .58) than the college overall GPA mean (M = 2.49, SD = .94) for the group of students who did not use career services. Significant difference was also found on their high school GPA ($t_{(985)}$ = 4.844, p = <.001) such that the mean high school GPA for the group of students who used career services was significantly higher (M = 3.41, SD= .39) than the mean high school GPA for the group of students who did not use career services (M = 3.29, SD = .41). When the two groups were compared on the rank score in high school class, statistically significant difference was found ($t_{(921)}$ = 4.064, p = <.001). The mean rank score for the students who used career services was lower (M = 25.56, SD = 20.65) than the mean rank score for the group of students who did not use career services ((M =31.10, SD =20.78) indicating that students who used career services ranked higher in their high school class than

students who did not use career services since a lower rank score indicated that the student performed better on their high school academics. The independent t-test results of the ACT composite score for the two groups revealed a statistically significant ($t_{(900)} = -2.677$, $p = <.008$) difference such that students who used career services had a higher mean for ACT composite score ($M = 25.48$, $SD = 3.54$) than students who did not use career services ($M = 24.85$, $SD = 3.50$).

D) Objective 4

The fourth objective was to compare career services users and non-users on their persistence to graduation as measured by a) whether or not the student graduated and b) time to degree completion in months. A Chi-square test of independence was conducted to compare the users and non-users on whether or not the student graduated using an alpha level of 0.05 set a` priori. The computed Chi-square value (χ^2 (1, n = 1000) = 253.75, $p < .001$) was statistically significant indicating that whether or not the student graduated was not independent of whether or not they used career services. Results in the relevant contingency table indicated that the majority of the students who used career services (n=434, 86.8%) graduated while the majority of the students who did not use career services (n=310, 62%) did not graduate.

To compare the two groups on time to degree completion in months, an independent t-test was conducted and no statistically significant difference ($t_{(622)} = -.898$, $p = .370$) was found. This indicated that the time to degree completion for the group of students who used career services ($M = 50.15$, $SD = 7.51$) and the group of students who did not use career services ($M = 49.57$, $SD = 7.48$) did not differ significantly.

E) Objective 5

The fifth objective was to determine if a relationship exists between persistence to graduation as measured by time to degree completion in months and the selected characteristics. Of the 12 selected characteristics, eight of these variables were found to have a statistically significant relationship with persistence to graduation. Results of the eight variables are as follows;

- College Overall GPA: $r = -.49$, $p = <.001$
- ACT composite score: $r = -.24$, $p = <.001$
- High School GPA: $r = -.20$, $p = <.001$
- Rank Score: $r = .16$, $p = <.001$
- Gender: $t_{(577.77)} = 4.553$, $p = <.001$
- Whether or not participated in Greek life: $t_{(313.19)} = 3.012$, $p = .003$
- Whether or not employed as student employee: $t_{(622)} = 2.372$, $p = .018$
- Race: $F(3, 602) = 6.84$, $p = <.001$

There were no statistically significant relationships found between persistence to graduation and the other four variables. Results of the four variables are as follows;

- First-generation student or not : $t_{(622)} = 1.767$, $p = .078$
- Nationality: $t(622) = .816$, $p = .415$
- Athlete or not: $t_{(622)} = .719$, $p = .472$
- Whether or not the student had financial Aid: $t_{(622)} = .708$, $p = .479$

Results of the Pearson product moment correlation for the overall GPA, ACT composite score, and high school GPA revealed statistically significant relationship. The negative r values indicate that students with higher scores in these three variables were likely to take a shorter time

to degree completion than students with lower scores. The rank score in high school was also significant with a positive r value. This suggests that a student with a low rank score in high school is more likely to take a shorter time to graduate than a student with a high rank score in high school. As previously discussed, a low rank score indicates better performance in high school class.

The variables gender, whether or not the student participated in Greek life, and whether or not employed as student employee was nominal-dichotomous and, therefore, were analyzed using the independent t-test. The significant t-test value for gender indicated that female students were more likely to take a shorter time to degree completion (M = 48.74, SD = 7.05) than male students (M = 51.46, SD = 7.77). Whether or not the student participated in Greek life was found to be statistically significant suggesting that students who participated in Greek life were more likely to take a shorter time to degree completion (M= 48.54, SD = 6.78) than students who did not participate in Greek life (M = 50.48, SD = 7.68). A statistically significant difference was also found between persistence to graduation and whether or not employed as student employee indicating that students who were employed as student employee took a slightly shorter time to graduate (M = 49.27, SD = 7.22) than students who were not employed as student employee (M = 50.69, SD = 7.72).

ANOVA was used to determine the relationship between persistence to graduation as measured by time to degree completion in months and the variable race. The findings indicated significant difference between two or more groups. A Tukey's HSD test revealed significant difference in time to degree completion between African American and each of the other groups (Asian, Caucasian, and Hispanic). The difference was such that African American had a higher mean for time to degree completion compared to the other groups.

F) Objective 6

The sixth objective was to determine if a model exists which explains a significant portion of variance in the persistence to graduation as measured by time to degree completion in months from the selected characteristics. In order to conduct the multiple regression analysis, categorical variables that had more than two levels, race for example, was binary coded. As such, a total of 27 independent variables were used in this analysis. Bivariate correlations indicated that 12 out of the 27 selected variables had significant correlations with persistence to graduation as measured by time to degree completion in months. The overall GPA had the highest correlation (r = -.50, p = <.001). Among the types of career services, the experiential education (r = .10, p = .01), use of the Careers2Geaux system (r = .09, p = .02), and maintaining a resume in the Careers2Geaux system (r = .09, p = .02) had significant correlations with time to degree completion.

The multiple regression analysis produced a statistically significant model (F (4, 524) = 49.84; p = <.001) explaining 27.4 % of the variance in persistence as measured by time taken to degree completion in months. The four variables which entered the regression model as significant predictors were; a) the overall GPA (F (1, 527) = 173.03; *p* = <.001) explaining 24.7 % of the variance in time to degree completion. The significant Beta coefficient (β = -.49, p = <.001) indicated that a lower overall GPA had higher time to degree completion; b) the career center's experiential education program which had a significant Beta coefficient (β = .09, p = .008) indicating that participation in experiential education programs at the career center increased the time to degree completion; c) gender with a significant Beta coefficient (β =.10, p = .013) indicating that male students took a longer time to graduate compared to female students when all other variables are held constant; and d) Hispanic which had a significant negative Beta

coefficient (β = -.09, p = <.015) indicating that students who were identified as Hispanic took a shorter time to graduate compared to students who were not Hispanic.

G) Objective 7

The seventh objective was to determine if a model exists that significantly increases the researcher's ability to correctly classify subjects on whether or not they persist to graduation from the following selected variables and the services of career center. The logistic regression analysis was used producing a statistically significant model with four predictor variables and correctly classified 85.4% cases of students who graduated or did not graduate. These variables were; a) overall GPA ($\chi^2_{(1)}$ =139.60, p = <.001) with a significant beta coefficient (β = 2.62) suggesting that a higher overall GPA is associated with a higher likelihood of the student graduating; b) the use of the Careers2geaux system ($\chi^2_{(1)}$ = 84.75, p = <.001) with a positive beta coefficient (β = 2.89) indicating that students who used the Careers2geaux system were more likely to persist to graduation; c) gender ($\chi^2_{(1)}$ =20.52, p = <.001) with a significant beta coefficient (β =-1.06) indicating that male students were less likely to persist to graduation than female students; and d) participation in job search appointments at the career center ($\chi^2_{(1)}$ =9.51, p = .002). A positive beta coefficient (β =2.06) indicated that participation in job search appointments increased the likelihood of persisting to graduation. Of these variables, use of the Careers2geaux system had the highest odds ratio of 17.94 indicating that use of the Careers2geaux system at the career center increased the likelihood of persisting to graduation by 17.94 times after controlling for other predictor variables.

Conclusions, Implications, and Recommendations

Based on the findings of this study, the following conclusions, implications, and recommendations were derived:

Conclusion 1

Participation in career services activities had a positive influence on student persistence to graduation as measured by whether or not the student graduated

This conclusion was based on the findings that 86.8% (n = 434) of the students who used career services graduated while only 38% (n = 190) of those who did not use career services graduated. In addition, when the group of students who used career services and the group of students who did not use career services were compared on their persistence to degree completion, the computed Chi-square value (χ^2 (1, n = 1000) = 253.75, p < .001) was statistically significant indicating that degree completion (whether or not the student graduated) was not independent of whether or not they used career services. The association was such the majority of the students who used career services (n=434, 86.8%) graduated while the majority of the students who did not use career services (n=310, 62%) did not graduate.

Even though the literature on the influence of career services on student persistence to graduation is scarce, these results are consistent with preliminary findings from an ongoing study indicating that there is a positive relationship between participation in career services activities and factors related to retention (Shoemaker & Krogmann, 2012). The findings are also consistent with other studies which, although did not focus on career services in general, found specific programs at the career services to be associated with increased student retention and persistence. For example, Anderson (2002) found that students who went through career counselling were retained at a higher rate than those who did not; students who used the career Discovery 1 in deciding their majors were retained at a higher rate than those who had declared majors and did not use the career Discovery 1 (Feduccia, 2003); and first-time students who enrolled in a career

exploration course in a community college had a higher retention than those who did not attend the course (French, 2014).

This study adds to the body of knowledge on student persistence and retention efforts in institutions of higher learning. While numerous studies have been conducted on this subject, most studies have focused on the student characteristics, institutional characteristics, specific groups (e.g. first-year students, minority groups, first-generation students, etc.), and specific programs (e.g. summer bridge program and first-year experience). Therefore, this study on participation in career services provides an additional element to the discussion on student persistence.

Existing models on persistence and retention of students in colleges and universities (e.g. Astin's, Spady's, Pascarella's, and Tinto's models) emphasize various important aspects in persistence decision- making such as academic and social integration, institutional and goal commitment, student involvement or engagement, and satisfaction. Based on this conclusion and these findings, the researcher recommends further research on participation in career services activities and/or programs to provide more insight on its influence in making a positive persistence decision. For example, is the persistence decision made out of enhanced goal commitment, increased engagement, or institutional commitment? Is it a direct or indirect relationship to persistence? Both qualitative and quantitative studies should be conducted to further develop a conceptual framework or model that would guide career services efforts and intervention programs on persistence and retention.

This study also has implications for practice. The National Association of Colleges and Employers (NACE) professional standards for college and university career services recommend periodic evaluation of programs in career services to determine how they help to achieve the

institution's stated missions (NACE, 2012). This includes an assessment of the "career services contribution to or impact on retention and degree completion" (NACE, 2012, p. 36). While career services practitioners may be aware of their role in student's persistence efforts in colleges (Shindell, 2013), results from this study provide verification of the positive impact of their role in persistence efforts and are useful in informing the university administration and management. One possible reason that students do not use career services is a lack of awareness.

Based on this conclusion, the researcher recommends development of an "orientation to career services" program and the university administration to mandate its implementation to all undergraduate students. The program should highlight all the services offered at the career center and the benefits thereof. This will increase the career services visibility and attract students who may not be aware of the useful resources provided at the career services. It will also be helpful in reaching out to students who may be aware of the services but who do not know that they are offered for free to all enrolled students. In addition, it would reach out to other students who may be too reluctant to seek out or have negative attitude about the office or the services offered.

Conclusion 2

<u>The students' overall college GPA had a positive influence on persistence to graduation</u>

This conclusion was based on the finding that the overall GPA had a significant and the highest correlation ($r = .50$, $p = <.001$) with persistence to graduation as measured by time to degree completion in months. In addition, the overall GPA explained 24.7% of the variance in time to degree completion. It was also found to significantly contribute to the logistic model for degree completion ($\chi^2_{(1)} = 139.60$, $p = <.001$) with a significant Beta coefficient ($\beta = 2.62$) and an odds ratio (exponential beta value) of 13.74 suggesting that an increase by one point in overall

GPA increased the likelihood to persist to graduation by 13.74 times when all other predictors are held constant.

Research evidence attributes academic performance in college as one of the important variables in the persistence process. Spady's model, for example, argues that background characteristics and college variables, such as grade point average, lead to social integration, a key element in the persistence process (Pascarella, 1982). Academic performance is also emphasized in Pascarella's model. He asserted that "Educational outcomes are expected to directly influence persistence/withdrawal decisions" (Pascarella, 1982, p.23). In fact, academic attributes were rated as the leading indicators of student's dropout by participating institutions of the American Association of State Colleges and Universities (AASCU) in a study on what works in student retention (Cowart, 1987).

This finding has implication on institutions of higher learning especially in regard to retention programs. In a recent study, retention practices that had the highest mean in contribution to retention in public four-year colleges and universities were academic advising, increased number of academic advisors, advising interventions with selected student populations, and comprehensive learning assistance center/lab (ACT, 2010_b). An effective retention program as outlined by Tinto (1987_a) should seek to accomplish the core purpose of educating the students and not just their mere retention. He emphasized a communal nature of life in colleges or universities and a commitment to students, education, and its mission (Tinto, 1987_a).

In this regard, and based on this finding, the researcher recommends that students' academic performance should not be left in the hands of the faculty members only. Specifically, the researcher recommends collaborative retention programs that align with the institution's mission and overall educational goal. The collaboration should involve all members of the

campus community from the administration, staff, faculty, student community groups or organizations, and support programs (e.g. center for academic success (CAS), CARE (Communicate, Assess, Refer, Educate), student health center, and academic intervention team). Furthermore, at the core of such programs should be a focus on academic development. Additionally, a collaborative retention program would ensure that everyone who interacts with students on campus is involved and vigilant on students' performance.

Conclusion 3

Participation in the experiential education at the institution's career center had an influence on persistence to graduation as measured by time to degree completion

This conclusion was based on the findings that participation at the Career center's Experiential education program had a significant correlation ($r = .10$, $p = .01$) to time to degree completion. In addition, experiential education was the second variable that entered the multiple regression model explaining 1% of the variance in time to degree completion. It also had a significant Beta coefficient ($\beta = .10$, $p = .008$) indicating that participation in experiential education programs at the career center tended to increase the time to degree completion.

The experiential education program at the career center provides opportunities for students to acquire some practical work experience while at the same time they explore career options and build their resume. These work experiences come in the form of internships, co-ops (cooperative education), summer jobs, part-time jobs, and volunteer opportunities. All the aforementioned activities involve student engagement, an essential component in persistence (Astin, 1984; Tinto 1993). Although students who participate in experiential education take slightly longer time to degree completion, their involvement in gaining meaningful work experience enhances their persistence to graduation, as this finding indicates.

Blau and Snell (2013) in their conceptual model for understanding professional development engagement and its impact, explained that participation in professional development activities is expected to lead to a timely graduation (four years or less) and appropriate job placement. This finding conflicts with part of their conceptual model as students who participated in experiential education took a slightly longer time to degree completion. Generally speaking, participation in programs like internships is likely to lengthen the time taken to degree completion. However, the prospect of an appropriate job placement after college encourages students to participate in experiential education, perhaps another reason for the motivation to persist to degree completion.

Experiential education as a tool for student persistence and retention was rated as the most applied retention practice in a study on what works in student retention. Of the 258 public four-year colleges and universities that responded to the survey, internships (97%) and tutoring (97%) were top on the list for the most applied retention practices (ACT, 2010_b). However, considering there are various programs under the umbrella "experiential education," further research is required exploring the influence of each of the programs such as coops, paid internship or unpaid internship, part-time jobs, etc.

This finding has implications on practice. Although not part of this conclusion, the descriptive statistics of the students who participated in the experiential education indicated low participation (n = 33, 6.6%) relative to other types of career services. From the findings in this research, the cause for the low numbers in the use of experiential education program at the career center is not known. Follow-up research should be conducted to determine whether it is the lack of opportunities for internships or other experiential programs or students are not interested in the programs. The results of the follow-up study should inform the career services on the

appropriate measures to take to increase participation in the experiential programs. For example, if there are minimal opportunities for internships, more collaboration with external organizations and networking with alumni could help to increase internship opportunities for students.

Conclusion 4

Students who participated in the career services had higher academic credentials in high school

This conclusion was based on the findings that the group of students who used the career services had significantly higher scores on their high school GPA ($t_{(985)} = 4.844$, $p = <.001$) such that the mean high school GPA for the group of students who used career services was significantly higher (M = 3.41, SD= .39) than the mean high school GPA for the group of students who did not use career services (M = 3.29, SD = .41). The ACT composite score ($t_{(900)} = -2.677$, $p = <.008$) for the group that used career services was also significantly higher (M = 25.48, SD = 3.54) than for the students who did not use career services (M = 24.85, SD = 3.50). In addition, the rank score in high school class was also statistically significant ($t_{(921)} = 4.064$, $p = <.001$) such that the mean rank score for the students who used career services was lower (M = 25.56, SD = 20.65) than the mean rank score for the group of students who did not use career services (M =31.10, SD =20.78) indicating that students who used career services ranked higher in their high school class than students who did not use career services since a lower rank score indicated that the student performed better on their high school academics.

Tinto's model explains the influence of entry-level characteristics (such as pre-college schooling) on how a student gets integrated into the social or academic system in college (Tinto, 1975, 1987_b, 1993). He argued that pre-entry attributes interact with and influence development of initial individual's intentions, educational expectations and goals, and commitment to the institution creating initial interactions within the academic and social system (Tinto, 1987_b,

1993). On the other hand, career services, through its various programs and activities, help students to integrate academically and socially (Shindell, 2013). In view of this, one possible explanation could be students with higher pre-college academic credentials are likely to form positive educational goals and commitment leading them to integrate easily into the university system, including participation in career services.

This conclusion is also consistent with a proposed model for professional development engagement (PDE). Blau and Snell (2013) proposed that precollege attributes (such as SAT/ACT composite score and high school GPA) are positively related to PDE. This is a construct within the student engagement defined "as the level of undergraduate engagement in professional development" (Blau & Snell, 2013, p. 690). Student engagement determines the time and energy devoted to educational and developmental activities such as studying and use of the institutional resources including the career services. Further, student engagement enhances persistence to graduation (Astin, 1984; Blau & Snell, 2013).

Based on this conclusion the researcher recommends that the career services establish institutional partnerships with high schools to proactively engage students at an early stage and form a basis for subsequent engagement once they join the college. Such a partnership should highlight the importance of higher education, emphasize the drivers of educational success (such as good grades), and build awareness of the resources on campus. Future research is required in this area especially focusing on each of the pre-college academic attributes and examining how much variance can be explained in student engagement. The study should control for the other pre-attributes such as personal characteristics (e.g. gender, race) and family background (e.g. social economic status, first-generation) in order to understand the impact of these attributes on the students' engagement.

Conclusion 5

Being a student employee while in college had an influence on persistence to graduation

This conclusion was based on the findings of the independent t-test conducted to assess the relationship between whether or not employed as a student employee and persistence to graduation. There was a statistically significant difference in persistence ($t_{(622)} = 2.372$, $p = .018$) such that students who were employed as a student employee took a shorter time to graduate ($M = 49.27$, $SD = 7.22$) than students who were not employed as a student employee ($M = 50.69$, $SD = 7.72$).

This finding is supported by Astin's theory of student involvement. He explained that the quality and quantity of a student's engagement in the campus environment influences learning and the student's development (Astin, 1984). One of the environmental factors he described was the influence of part-time employment on campus while in college. Working as a student employee not only enhances interactions with other students, staff, and faculty, but it also creates a sense of attachment to the institution (Astin, 1984). According to Tinto (1993) involvement in the social and academic system has an influence on student persistence directly and indirectly through student effort. Tinto stated that "students will be more likely to invest in greater effort to learn where they become involved as members of the college community" (Tinto, 1993, p. 71). Both Astin (1984) and Tinto (1993) linked student engagement to enhanced learning and in turn to persistence.

Since learning and persistence arise from student engagement, it means that the interactions with other peers, faculty, and staff plays a key role and, therefore, need to be positive for enhanced persistence. Therefore, the researcher recommends that administrators of departmental offices with student employees make deliberate efforts to provide meaningful

interactions and enhanced experiences for student workers. Meaningful interactions encompass various elements such as creating an enabling environment where students can interact freely and develop; enforcing the required maximum hours per week that university allows student employees to work; and showing a caring attitude and being sensitive to students needs be it academic or personal. In addition, while it may not be practical to provide part-time student employment to all undergraduate students on campus, the university should make efforts to provide as many opportunities as possible especially to those who apply. Although there is literature supporting the influence on persistence for students employed in part-time jobs on campus, future research should look at differences in persistence between students employed in their departments of study (where they are enrolled) and those employed in other departments.

Conclusion 6

Race had an influence on student persistence to graduation

This conclusion was based on the findings that a significant difference ($F(3, 602) = 6.84$, $p = <.001$) was found between two or more groups when the relationship between race and persistence to graduation as measured by time to degree completion in months was examined. The findings indicated significant differences between African American and each of the other groups (Asian, Caucasian, and Hispanic) by taking a longer time to graduate.

Numerous studies have shown differences in persistence among racial groups. In a synthesis of several attrition studies, Pascarella (1982) noted that Hispanics, African Americans, and American Indians tend to drop out more often. However, unlike Hispanics, the differences in African Americans and American Indians disappear when other factors such socioeconomic status and scores on ability tests are controlled (Pascarella, 1982). Although this conclusion is based on length of time to degree completion and not on drop out, this illustrates some of the

difference found among racial groups. Tinto (1993), however, warned of attributing these generalized characteristics of a group to each and every member of the particular group.

The selected institution of study was a predominantly white institution. Thus, a possible explanation is that African American students took slightly longer to graduate because they had to overcome some barriers unique to minority students. Furthermore, the types of social involvement and relationships that heightens integration into the university could be different for the different racial groups. In a largely white institution, students of color face fewer options for membership into communities that might enhance their integration into the typical social life in the institution than do white students. This explains the barriers they have to break before they can be effectively integrated into the social and academic system.

In view of that and based on this conclusion, the researcher recommends that student and community organizations should take an active role in providing supportive programs and experiences both for identity and support within the university for different ethnic groups. Additionally, the researcher recommends that the university administration encourage student's participation in these student and community groups. Social interactions help students to discover themselves and guide their direction, affirm their identity, give them access to role models, enable them to link their identity and career aspirations, and help them interpret their college experiences (Moxley et al, 2001).

Conclusion 7

A significant and meaningful explanatory model was found for persistence to graduation

This conclusion was based on the findings of the logistic regression analysis which achieved a model of best fit (Nagelkerke R2 = .67) with four variables explaining 67% of the variance in persistence to graduation and correctly classified 85.4% of the cases of students who

graduated or did not graduate. This was a meaningful improvement from the null model which predicted an overall percentage of 63.7%. The four variables with significant contribution in the explanatory model were Overall GPA ($\chi^2_{(1)}$ =139.60, p = <.001), Careers2Geaux system use ($\chi^2_{(1)}$ = 84.75, p = <.001), Gender ($\chi^2_{(1)}$ =20.52, p = <.001), and Job search appointments ($\chi^2_{(1)}$ =9.51, p = .002). Of these variables it was striking to note that, although the overall GPA had the highest Wald statistic, the use of the Careers2geaux system had the highest odds ratio (17.94) suggesting that use of the Careers2geaux system increased the likelihood of persisting to graduation by 17.94 times after controlling for other predictor variables while an increase by one point in the overall GPA increases the likelihood to persist to graduation by 13.74 times when all other predictors are held constant. As for gender (β =-1.06, Exponential β = .35), male students were less likely to persist to graduation than female students, and their odds of persisting to graduation decreased by .35 times when compared to female students, all other variables held constant. Participation in job search appointments at the career center increased the likelihood of persisting to graduation, and their odds of persisting to graduation was 7.88 times greater when all other predictor variables are held constant.

As discussed in the previous conclusion, overall GPA is an important element in the persistence process (Pascarella, 1982; Tinto, 1993). As for gender, generally female students persist more than male students although variations between persistence for female and male students may take different shapes and usually can be accounted for by other factors, such as marital status, socioeconomic status, and motivation (Astin, 1984; Pascarella, 1982; Tinto, 1993). Contribution by the use of the Careers2geaux system and the job search appointments could be explained by the level of students' engagement which leads to persistence to graduation. Another possible explanation especially for the contribution by the job search

appointments is goals commitment as explained in Tinto's model (Tinto, 1984). Generally speaking, when a person is going for a job search appointment it's an indication of clear career goals. Such an individual is not only committed to achieving the short-term goals of academic success in college but is also focused on long-term goals for job opportunities. Furthermore, having clear career goals leads to enhanced goal commitment and in turn to more positive persistence decisions (Hull-Blanks et al., 2005).

This finding adds to the literature and offers a basis for further research, which the researcher recommends, to better improve a model upon which students could be correctly classified on whether or not they will persist to graduation. To build on this model, the researcher recommends inclusion of additional variables that could help to increase percentage of the variance explained in persistence to graduation beyond the 67% achieved in this model, for example, socioeconomic status, hometown location and size, and age. However, with the model correctly classifying 85.4% of the cases of students who graduated or did not graduate this finding has implications on practice as it offers insight to the university administration on important contributors to student persistence. The explanatory model contains an academic attribute, a personal attribute, and use of some career services programs.

Conclusion 8

The top three career services used most frequently at the institution's career center were the Careers2geaux system, career events, and maintaining a resume in the Careers2geaux system

This was based on the conclusion that these services had more than 50% participation as follows; Careers2Geaux system (n = 376, 75.2%), participation at one or more career events (n = 270, 54%), and maintaining a resume in the Careers2Geaux system (n= 267, 53.4%). All the other reported types of career services had less than 25% participation.

There are several services offered at university career services. The most commonly utilized by career centers, however, is counselling according to the career services benchmark survey for colleges and universities (NACE, 2013; NACE, 2014_a; Nagle & Bohovich, 2000). In the 2013-14 survey responded by 881 NACE members, 98% offered counseling by appointment, 81 % offered drop-in counseling, and 90% conducted career fairs (NACE, 2014_a). Other services reported by more than 50% of the respondents included career workshops, academic and employer internships, on-campus interviewing, work/study programs, career assessment tools, and career resources library (NACE, 2014_a).

The Careers2geaux system at the institution's career center is an online system that helps students to access job postings, manage a job search (e.g. upload a resume, cover letter, etc.), find information on career-related events and activities, find on-campus interviews, and networking. It also allows students and alumni to take a mock interview module right in the comfort of their homes. Being a one-stop system providing a range of resources to students provides a possible explanation why it was the most frequently used type of career services. Furthermore, the convenience of accessing it anywhere anytime makes it convenient for most students.

This finding provides data-driven information to the career services administration and staff on resources that students use frequently. An implication could be to assess the elements that make these most frequently used services popular and assess what can be implemented in other career services programs or activities to increase their participation. Further research is recommended to identify the specific resources that students use most frequently within the Careers2geaux system. A qualitative study would be more useful in order to identify the reasons

that make some resources more popular than others within the Careers2geaux system as well as among the other services offered at the career center.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL

ACTION ON EXEMPTION APPROVAL REQUEST

Institutional Review Board
Dr. Dennis Landin, Chair
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TO: Anne Sang
School of Human Resource Education & Workforce Dev.

FROM: Dennis Landin
Chair, Institutional Review Board

DATE: April 1, 2015

RE: **IRB#** E9283

TITLE: Career Development Among College Students: Exploring the Impact of Career Services on Student Persistence to Graduation

New Protocol/Modification/Continuation: New Protocol

Review Date: 4/1/2015

Approved X **Disapproved** _____

Approval Date: 4/1/2015 **Approval Expiration Date:** 3/31/2018

Exemption Category/Paragraph: 4a

Signed Consent Waived?: NA. All data are secondary and de-identified

Re-review frequency: (three years unless otherwise stated)

LSU Proposal Number (if applicable): ____

Protocol Matches Scope of Work in Grant proposal: (if applicable) _____

By: Dennis Landin, Chairman _____

PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –
Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE:**

**All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at http://www.lsu.edu/irb*

APPENDIX B: SCHOOLS/DEPARTMENTS IN WHICH ENROLLED DURING THE LAST SEMESTER FOR THE STUDENTS WHO ENTERED A RESEARCH UNIVERSITY –VERY HIGH RESEARCH ACTIVITY (RU/VH) IN THE SOUTHERN PORTION OF THE UNITED STATES IN THE FALL 2008 AND USED CAREER SERVICES

	School/Department	N	%		School/Department	N	%
1.	Biological Sciences	30	6.0	36.	Info Systs & Decision Sci	5	1.2
2.	Mass Communication	30	6.0	37.	Microbiology	5	1.0
3.	Accounting	22	4.4	38.	Studio Art	5	1.0
4.	Mechanical Engineering	20	4.0	39	Architecture	4	.8
5.	Elementary Grades Ed.	19	3.8	40.	Biochemistry	4	.8
6.	English	19	3.8	41.	Environmental Engr	4	.8
7.	Kinesiology	19	3.8	42.	General Studies	4	.8
8.	Physics	18	3.6	43.	French	3	.6
9.	Marketing	17	3.4	44.	Industrial Engineering	3	.6
10.	Chemical Engineering	16	3.2	45.	Internat Trade & Finance BS	3	.6
11.	Finance	15	3.0	46.	Mathematics	3	.6
12.	General Business Admin	15	3.0	47.	Chemistry	2	.4
13.	Civil Engineering	14	2.8	48.	Environ Management Systems	2	.4
14.	History	13	2.6	49.	Geology-Professional	2	.4
15.	Construction Management	13	2.6	50.	Music Education	2	.4
16.	Sport Administration	11	2.2	51.	Pre-Humanities and Social Sci.	2	.4
17.	Sociology	10	2.0	52.	PK-3 Teacher Certification	2	.4
18.	Political Science	10	2.0	53.	Restricted Admit	2	.4
19.	Electrical Engineering	9	1.8	54	Scholastic Drop - Summer only	2	.4

(APPENDIX B continued)

	School/Department	N	%		School/Department	N	%
20.	Management	9	1.8	55.	Agricultural Education - 6-12	1	.2
21.	Communication Studies	8	1.6	56.	Anthropology	1	.2
22.	International Studies	8	1.6	57.	Allh-Dental Hygiene	1	.2
23.	Interdisciplinary Studies	8	1.6	58.	Economics	1	.2
24.	Pre-Nursing Junior Div	7	1.4	59.	Computer Engineering	1	.2
25.	Petroleum Engineering	7	1.4	60.	Engineering Undecided	1	.2
26.	Communication Disorders	7	1.4	61.	Landscape Architecture	1	.2
27.	Computer Science	7	1.4	62.	Music	1	.2
28.	Animal-Dairy-Poultry	6	1.2	63.	Nutritional Sciences	1	.2
29.	Biological Engineering	6	1.2	64.	Pre-Business Administration	1	.2
30.	Liberal Arts	6	1.2	65.	Pre-Landscape Arch	1	.2
31.	Natural Resource Ecol & Mgt	6	1.2	66.	Pre-Law	1	.2
32.	Agricultural Business	5	1.0	67.	Pre-Pharmacy	1	.2
33.	Textiles/Apparel/Merchand	5	1.0	68.	Philosophy	1	.2
34.	Human Resource Education	5	1.2	69.	Spanish	1	.2
35	Interior Design	5	1.2	70	Undecided	1	.2

APPENDIX C: DEGREE AWARDED FOR THE STUDENTS WHO ENTERED A RESEARCH UNIVERSITY –VERY HIGH RESEARCH ACTIVITY (RU/VH) IN THE SOUTHERN PORTION OF THE UNITED STATES IN THE FALL 2008 AND USED CAREER SERVICES

Code	Degree	N	%
BS	Bachelor of Science	218	50.2
BA	Bachelor of Arts	81	18.6
BAMC	Bachelor of Arts in Mass Communication	29	6.7
BSME	Bachelor of Science in Mechanical Engineering	18	4.1
BSCE	Bachelor of Science in Civil Engineering	13	3.0
BSCHE	Bachelor of Science in Chemical Engineering	13	3.0
BSCM	Bachelor of Science in Construction Management	11	2.5
BSEE	Bachelor of Science in Electrical Engineering	8	1.8
BSPETE	Bachelor of Science in Petroleum Engineering	7	1.6
BFA	Bachelor of Fine Arts	5	1.2
BIS	Bachelor of Interdisciplinary Studies	5	1.2
BARCH	Bachelor of Architecture	4	1.0
BGS	Bachelor of General Studies	4	1.0
BID	Bachelor of Interior Design	4	1.0
BSBE	Bachelor of Science in Biological Engineering	4	1.0
BSENVEG	Bachelor of Science in Environmental Engineering	3	.7
BME	Bachelor of Music Education	2	.5
BSGEOL	Bachelor of Science in Geology	2	.5
BSIE	Bachelor of Science in Industrial Education	2	.5

(APPENDIX C continued)

Code	Degree	N	%
BLA	Bachelor of Architecture Engineering	1	.2
	Total	434	100[a]

[a] 66 participants did not graduate

APPENDIX D: SCHOOLS/DEPARTMENTS IN WHICH ENROLLED DURING THE LAST SEMESTER FOR THE STUDENTS WHO ENTERED A RESEARCH UNIVERSITY –VERY HIGH RESEARCH ACTIVITY (RU/VH) IN THE SOUTHERN PORTION OF THE UNITED STATES IN THE FALL 2008 AND DID NOT USE CAREER SERVICES

	School/Department	N	%		School/Department	N	%
1.	Biological Sciences	49	9.8	45.	Natural Resource Ecol & Mgt	3	.6
2.	Pre-Nursing Junior Division	45	9.0	46.	Nutritional Sciences	3	.6
3.	Kinesiology	44	8.8	47.	Pre-Arts & Sciences	3	.6
4.	Physics	15	3.0	48.	Pre-Agriculture	3	.6
5.	Animal-Dairy-Poultry	15	3.0	49.	Pre-Engineering	3	.6
6.	History	14	2.8	50.	Pre-Interior Design	3	.6
7.	Mass Communication	14	2.8	51.	Undecided - Sci. & Engineering	3	.6
8.	Political Science	14	2.8	52.	Biochemistry	2	.4
9.	English	13	2.6	53.	Biological Engineering	2	.4
10.	Pre-Education	12	2.4	54	Engineering Undecided	2	.4
11.	Undecided	12	2.4	55.	Interdisciplinary Studies	2	.4
12.	Management	10	2.0	56.	Liberal Arts	2	.4
13.	Construction Management	9	1.8	57.	Microbiology	2	.4
14.	Elem Grades Education	9	1.8	58.	Music Education	2	.4
15.	Mechanical Engineering	9	1.8	59.	Allh-Physician's Assistant	2	.4
16.	Sociology	8	1.6	60.	Petroleum Engineering	2	.4
17.	Studio Art	8	1.6	61.	Physics	2	.4
18.	Theatre	8	1.6	62.	PK-3 Teacher Certification	2	.4

(APPENDIX D continued)

	School/Department	N	%		School/Department	N	%
19.	General Business Admin	7	1.4	63.	Basic Sciences-Undecided	1	.2
20.	Pre-Humanities and Soc. sci.	7	1.4	64.	Civil Engineering	1	.2
21.	Chemical Engineering BS	6	1.2	65.	Coastal Environ. Science	1	.2
22.	Chemistry BS	6	1.2	66.	Child & Family Studies	1	.2
23.	Communication Disorders	6	1.2	67.	Design-Architecture	1	.2
24.	General Studies	6	1.2	68.	Architecture Waiting List	1	.2
25.	Marketing	6	1.2	69.	Studio Art - Portfolio Review	1	.2
26.	Pre-Business Administration	6	1.2	70.	Allh-Dental Hygiene	1	.2
27.	Communication Studies	5	1.0	71.	Economics	1	.2
28.	Computer Science	5	1.0	72.	Education-Undecided	1	.2
29.	Textiles/Apparel/Merchand	5	1.0	73.	Electrical Engineering	1	.2
30.	Music	5	1.0	74.	French	1	.2
31.	Pre-Basic Science	5	1.0	75.	Geology-Professional	1	.2
32.	Restricted Admit	5	1.0	76.	German	1	.2
33.	Anthropology	4	.8	77.	Child & Family Studies	1	.2
34.	Finance	4	.8	78.	Music	1	.2
35	International Studies	4	.8	79.	Pre-Architecture	1	.2
36.	Mathematics	4	.8	80.	Pre-Art	1	.2
37.	Pre-Science	4	.8	81.	Pre-Degree	1	.2
38.	Scholastic Drop– Sum.Only	4	.8	82.	Philosophy BA	1	.2
39.	Sport Administration	4	.8	83.	Pre-Law	1	.2

(APPENDIX D continued)

	School/Department	N	%		School/Department	N	%
40.	Agricultural Business	3	.6	84.	Pre-Music & Dramatic Arts	1	.2
41.	Architecture	3	.6	85.	Pre-Pharmacy	1	.2
42.	Computer Engineering	3	.6	86.	Spanish	1	.2
43.	Environmental Engr	3	.6	87.	Summer Only	1	.2
44.	Interior Design	3	.6	88.	Athletic Training	1	.2

APPENDIX E: DEGREE AWARDED FOR THE STUDENTS WHO ENTERED A RESEARCH UNIVERSITY –VERY HIGH RESEARCH ACTIVITY (RU/VH) IN THE SOUTHERN PORTION OF THE UNITED STATES IN THE FALL 2008 AND DID NOT USE CAREER SERVICES

Code	Degree	N	%
BS	Bachelor of Science	105	55.3
BA	Bachelor of Arts	47	24.7
BAMC	Bachelor of Arts in Mass Communication	8	4.2
BFA	Bachelor of Fine Arts	6	3.2
BSCM	Bachelor of Science in Construction Management	5	2.6
BGS	Bachelor of General Studies	4	2.1
BARCH	Bachelor of Architecture	3	1.6
BID	Bachelor of Interior Design	3	1.6
BM	Bachelor of Music	2	1.1
BIS	Bachelor of Interdisciplinary Studies	1	.5
BME	Bachelor of Music Education	1	.5
BSCES	Bachelor of Science in Coastal Environmental Sci.	1	.5
BSCHE	Bachelor of Science in Chemical Engineering	1	.5
BSCM	Bachelor of Science Construction Management	1	.5
BSEE	Bachelor of Science in Electrical Engineering	1	.5
BSGEOL	Bachelor of Science in Geology	1	.5
BSPETE	Bachelor of Science in Petroleum Engineering	1	.5
Total		190	100[a]

[a] 310 participants did not graduate

VITA

Anne Wanjiku Sang was born in Nyeri County, Kenya, and raised in Kaheti village by her parents, Mrs. Lucy Njoki Njagi and Mr. John B. Njagi Ngamau. She attended Gatura Primary School and later joined Gitugi Girls High School in Murang'a County, Kenya. She received her Bachelor of Education (Home science and Technology) from Moi University, Kenya in December 2004. She worked with Fellowship of Christian Unions (FOCUS-Kenya) as a Campus Staff (Egerton University, 2004-2005) with a role to develop student leaders through training, counseling and mentorship.

Thereafter she joined Standard Chartered Bank (SCB) as a graduate Clerk in 2007 and served in various positions including Personal Financial Consultant (2007-2008), Acting Customer Service and Sales Manager (2008-2009), and Branch Sales Manager (2009-2010) during which time she also acted as Regional Sales Manager (SCB Western Region). She resigned from the bank and moved to Baton Rouge, USA to join her spouse and pursue graduate studies in Human Resource. She was admitted to the School of Human Resource Education and Workforce Development, Louisiana State University in 2012 and awarded a graduate assistantship (Research and Teaching).

While in graduate school, she was actively involved in teaching online classes in leadership development courses for undergraduate students as well as a contributing member of the 3-person instructional team for a graduate-level leadership course. She also conducted various research projects and two of her papers were presented at an International Conference on Urban Education and The Allied Academies. She obtained an MSc in Human Resource Education (2014) and she is currently on track to graduate with a PhD in August 2015.